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Johns-Manville
ASBESTOS SHINGLES for ROOFING AND SIDING

RECEIVED
JUN 17 1949
A. S. T. M.

DS Series 227

A.I.A. File No. 12-F-2

J-M Rigid Asbestos Shingles

The modern demand is for roof and side wall protection which is not only fireproof and durable but also distinctive in appearance. Because J-M Rigid Asbestos Shingles so fully meet these requirements they are constantly becoming more popular. Made of asbestos fibre and cement formed under great pressure, these shingles cannot burn or decay and exterior maintenance expense is reduced to a minimum.

Recognizing the trend toward colorful roofs, Johns-Manville has sought to provide a wide choice and to produce pleasing variations of tone without too sharply contrasting hues and shades.

J-M Asbestos Siding Shingles provide distinctive shadow-line effects, with wavy or straight butt lines. They are available in white and attractive permatone color blends.

For both roofing and siding, J-M Asbestos Shingles make possible the most effective harmony between the house and the surrounding landscape.

Detailed information including styles, sizes, colors, weights, etc., is given on separate data sheets.

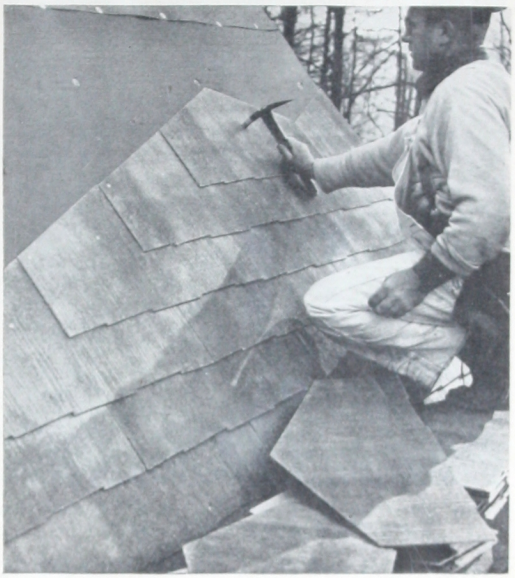
Asbestos Roofing Shingles

J-M American Colonial Asbestos Shingles provide a roof which is not only durable and attractive but extremely economical. Each strip shingle on the roof covers as much area as the five ordinary strip shingles it appears to be. Yet it can be applied in one operation, self-aligned.

American Colonial Shingles are offered in colors which harmonize with any natural surroundings and their clean-cut shadow lines make for interest in a roof.



J-M American Colonial Asbestos Shingles are durable, attractive and economical



Each strip shingle on the roof covers as much area as the five ordinary strip shingles it appears to be

Asbestos Siding Shingles

For side wall protection which is comparable to the roofing shingles in fire resistance and attractiveness, Johns-Manville has produced asbestos siding shingles. These shingles are divided into two groups, the universally popular textured white or gray asbestos shingles with grained surface accurately reproducing wood textures, and others which have colorful mineral granules pressed into their surface.

Application Directions

Complete directions for the application of J-M Rigid Asbestos Shingles, including flashings, and treatment of valleys, hips and ridges, appear on other data sheets. The following directions summarize the important details for proper application.

Roofing Shingles: The shingles should not be applied over a wet or damp roof deck. When a job is left partially complete, felt should be laid over the topmost applied courses to prevent rain from running down underneath the shingles.

PRODUCT INFORMATION IS SUBJECT TO FREQUENT CHANGE. THE EXACT DETAILS AND AVAILABILITY AT PARTICULAR LOCATIONS SHOULD BE CHECKED WITH THE NEAREST JOHNS-MANVILLE OFFICE.

ID 89-84177 TCF

Printed in U.S.A.



Charm and variety found in textured wood are an inherent part of J-M Asbestos Siding Shingles

The minimum roof pitch for American Colonial shingles is 5″ per foot. When the roofing shingles are used over sheathing, apply one layer of J-M Asbestos Slaters Felt horizontally before laying the shingles.

Boards on new roofs should be dry, well seasoned, of narrow width and uniform thickness, laid close (tongue and grooved preferred), and nailed with at least two nails to each rafter.

Satisfactory results can be secured applying asbestos shingles over old wood shingles; with the provision, however, that missing shingles are replaced, loose and curled shingles firmly nailed. After the surface is made as uniform as possible, J-M Asbestos Slaters Felt should be applied before the new shingles are laid.

Siding Shingles: When application is to be made over existing wood shingles or clapboards, loose and curled siding must be firmly nailed, decayed siding replaced and horizontal filler strips nailed against the butt edges of the existing siding or shingles. In some instances it may be more economical to remove existing siding down to the wood sheathing.

Work then proceeds in the same manner as over new sheathing using J-M Asbestos Slaters Felt applied over the side wall. A cant strip is placed along the bottom of the side wall before the first course is applied.

J-M Asbestos Shingle Accessories:

Asbestos Slaters Felt: For use as a liner under asbestos shingles. This asphalt-saturated asbestos felt is furnished in 3-sq (324 sq ft), 32″ wide, weighing 45 lb per roll.

Nails: J-M Asbestos Shingles are applied with Tin-Plated Bronze Face Nails, and Galvanized Needle-Point Nails. The first type is packed in cartons of 206 nails, in sizes of 1″ through 2″, in ¼″ increments. Galvanized Needle-Point Nails are furnished about 230 of 1¼″; 195 of 1½″; and 150 of 2″ nails per lb. The bronze nails are used for face-nailing of siding shingles.

Siding Shingle Cleaner: A liquid for cleaning certain types of J-M Asbestos Siding Shingles in accordance with instructions. Furnished in 1-qt bottles or in cartons containing 4 one-quart bottles.

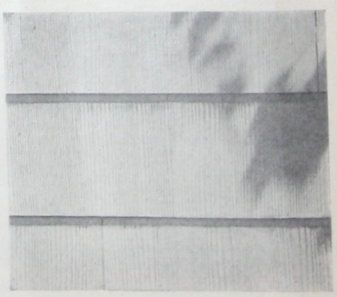
Shingle Cutter: Various styles are available for rapid, efficient cutting, punching and notching of asbestos shingles.

How Asbestos Shingles Are Sold

Asbestos shingles are sold by the square, which means sufficient shingles to cover 100 sq ft of surface when applied in accordance with manufacturer's directions. Necessary eave starters and ridge and hip shingles may be purchased separately.



Uniform thick, Asbestos Siding Shingles with Cedargrain Texture and wavy or straight butt lines, respectively



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Asbestos Shingles from: Manville (M), Waukegan (W) and Marrero (G) Plants

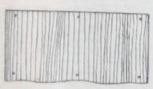
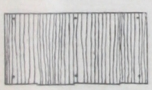
Asbestos Roofing Shingles

Shape	Catalog No., Style Colors (textured)	Plants	Size, in, Type	Exposure in	Shingles per sq	Approx. wt. lb per sq	Starters and Ridge Shingles
	No. 607 American Colonial (American method) Black blend Red blend Green blend Silver Gray Natural gray Dover white	 M W G M W G M W G G M W G	14 x 30 Uniform thickness	6	80	280; natural gray and white, 260	No. 636 starter No. 697 hip and ridge shingle

Starters and Ridge Shingles

Shape	Catalog Number and Style	Colors (textured)	Plants	Size, in, Type	Pieces per 100 linear ft	Approx. wt. lb 100 linear ft
	No. 636 starter—Used with No. 607 American Colonial shingle	Black blend Red blend Green blend Silver Gray Natural gray Dover white	M W G M W G M W G G M W G	30 wide Uniform thickness	40	65; natural gray and white, 60
	No. 697 hip and ridge shingle—Used with No. 607 American Colonial	Black blend Red blend Green blend Silver Gray Natural gray Dover white	M W G M W G M W G G M W G	$4\frac{19}{32}$ to $5\frac{11}{32}$ wide by 14 long Uniform thickness	340	255; natural gray and white, 235

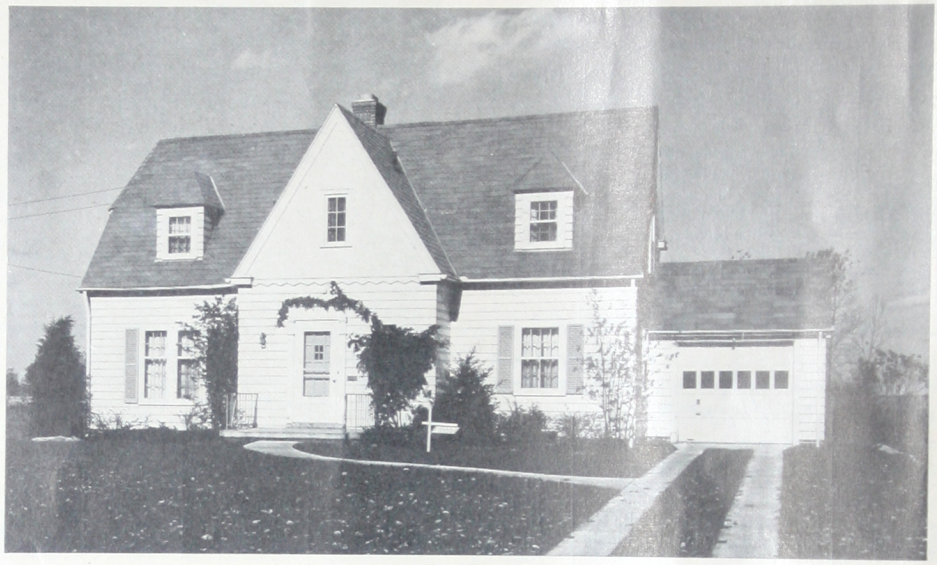
Asbestos Siding Shingles

Shape	Catalog No.	Plants	Colors	Textures	Size, in, Type	Exposure, inches	Shingles per sq	Approx. wt. lb per sq
	105-U	M W G M W G M W G M W G	Permatone light green Permatone light buff Permatone silver gray Dover white	Cedargrain Cedargrain Cedargrain Cedargrain	24 x 12 Uniform thickness	24 x 10½	57	185
	107-U	G M W G	Permatone silver gray Dover white	Cedargrain Cedargrain	24 x 12 Uniform thickness	24 x 10½	57	185
	109-U	M W M W M W G M W G	Permatone light green Permatone light buff Permatone silver gray Dover white	Cedargrain Cedargrain Cedargrain Cedargrain	24 x 12 Uniform thickness	24 x 10½	57	185

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ASBESTOS SHINGLES FROM MANVILLE (N. J.), WAUKEGAN (ILL.), AND MARRERO (LA.)
March, 1948 (Cancelling sheet dated September, 1947)
BMR-930

Printed in U.S.A.





Roofs of J-M Asbestos Shingles are fireproof, durable and economical. The variety of colors available makes it possible to select one which provides the most effective harmony between the house and its surroundings

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J-M Asbestos Shingles Available from Pittsburg Plant

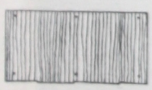
Asbestos Roofing Shingles

Shape	Catalog No., Style, Colors	Texture	Size, in., Type	Exposure in.	Shingles per sq	Approx. wt. lb per sq	Starters and Ridge Shingles
	No. 607 American Colonial (American method) Black blend Green blend Copper blend Silver gray blend White Permatone	Cedargrain	14 x 30 Uniform thickness	6	80	280	No. 636 starter No. 697 hip and ridge shingle

Starters and Ridge Shingles

Shape	Catalog Number and Style	Colors	Textures	Size, in., Type	Pieces per 100 linear ft	Approx. wt. lb 100 linear ft
	No. 636 starter—Used with No. 607 American Colonial shingle	Black blend Green blend Copper blend Silver gray blend White Permatone	Cedargrain	30 wide Uniform thickness	40	65
	No. 697 hip and ridge shingle—Used with No. 607 American Colonial	Black blend Green blend Copper blend Silver gray blend White Permatone	Cedargrain	$4^{19}/_{32}$ to $5^{11}/_{32}$ wide by 14 long Uniform thickness	340	255

Asbestos Siding Shingles

Shape	Catalog No.	Colors	Textures	Size, in., Type	Exposure, inches	Shingles per sq	Approx. wt. lb per sq
	105-U	Permatone light green Permatone light buff Permatone silver gray Permatone white	Cedargrain	24 x 12 Uniform thickness	24 x 10½	57	185
	107-U	Permatone Light Green Permatone Light Buff Permatone silver gray Permatone white	Cedargrain	24 x 12 Uniform thickness	24 x 10½	57	185
	109-U	Permatone light green Permatone light buff Permatone silver gray Permatone white	Cedargrain	24 x 12 Uniform thickness	24 x 10½	57	185

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Because of their fire-resistance, beautiful textures, and economy of application, J-M Asbestos Siding Shingles are widely used for side wall protection



Constructed of J-M Asbestos Roofing and Siding Shingles, the exterior of this cottage is fireproof and will not deteriorate or require periodic painting

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J-M Asbestos Shingles Available from Asbestos Factory

Asbestos Roofing Shingles

Shape	Catalog No.-style	Size	Type	Colors	Approx. wt. lb. per sq.	Weather exposure	Shingles per sq.	Starters and Ridge Shingles
	No. 607 Durabestos (American Method)	14″ x 30″	Uniform thickness	Gray blend Black blend Red blend Green blend	290	6″	80	No. 636 starter No. 697 hip and ridge shingle

Starters and Ridge Shingles

Shape	Catalog number and style	Size	Type	Colors	Pieces per 100 linear ft.	Approx. wt. lb. 100 linear ft.
	No. 636 starter—Used with No. 607 Durabestos shingle	30″ wide	Uniform thickness	Same as No. 607 Durabestos shingle	40	65
	No. 697 hip and ridge shingle—Used with No. 607 Durabestos shingle	$4\frac{19}{32}$″ to $5\frac{11}{32}$″ by 16″ long	Uniform thickness	Same as No. 607 Durabestos shingle	340	300

Asbestos Siding Shingles

Shape	Catalog number	Size	Type	Colors	Texture	Approx. wt. lb. per sq.	Exposure	Shingles per sq.
	105-U	12″ x 24″	Uniform thickness	Blended gray Dover white	Cedargrain	185	10½″ x 24″	57



J-M Asbestos Shingles are equally adaptable for application on new structures or for re-roofing and re-siding

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The attractive J-M Durabestos roofing shingle is as economical and simple to apply as an asphalt strip shingle

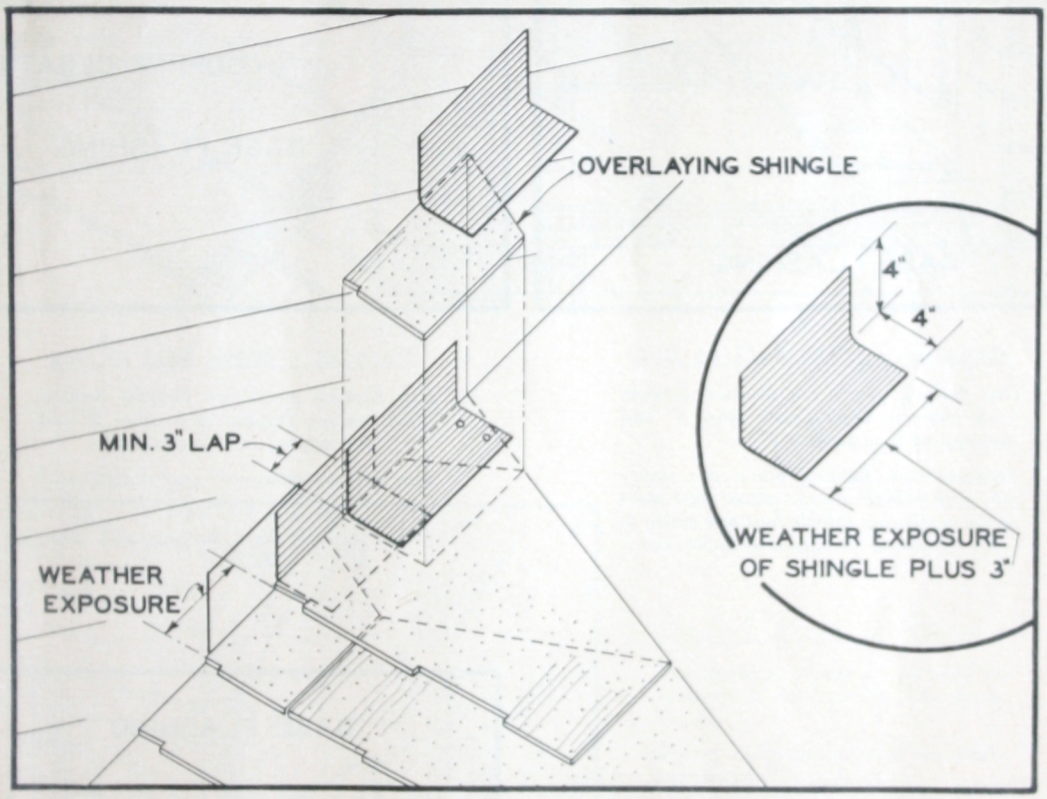
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METAL* FLASHING SYSTEMS

For

ASBESTOS SHINGLE ROOFS

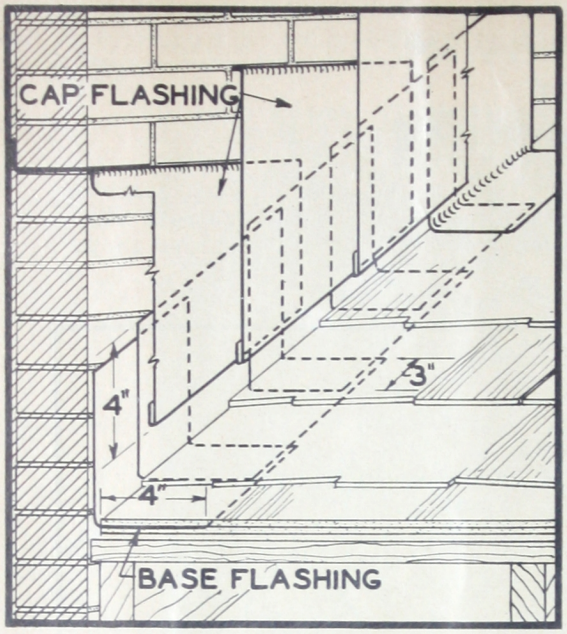
American Colonial Asbestos Shingles are flashed the same as wood, slate or other rectangular shingles. The drawing shows that although this shingle has an unusual shape, the same metal flashing pieces are woven into the courses in the same familiar manner.



Base flashing pieces are cut equal to the weather exposure of shingles plus 3" (see detail). They are woven into each course of shingles placed just short of the overlaying shingle butt and nailed to the sheathing through the upper end. Place shingle nails to avoid penetrating flashing

* Adaptations of similar details published by such authorities as the Copper and Brass Research Association, Revere Copper and Brass, Inc., etc.

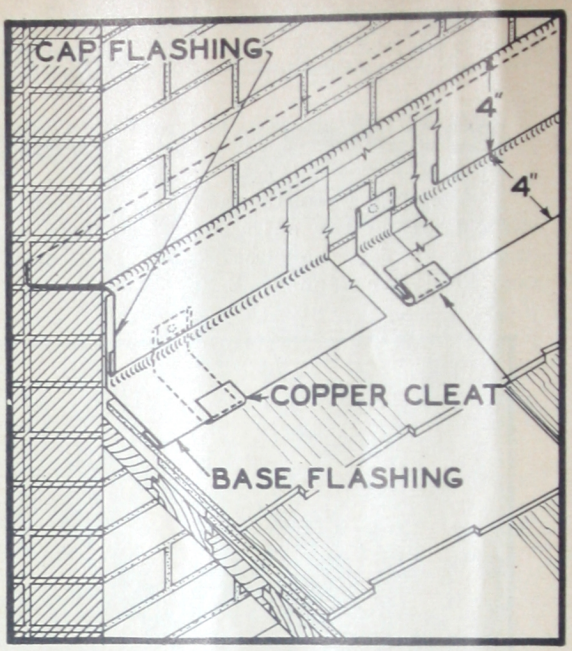
JOHNS-MANVILLE Building Products	DATE November, 1947
Metal Flashing Systems for Asbestos Shingle Roofs	BMR-960



Flashing - Brick Wall at Side

Cap flashing pieces are inserted between brick courses, lapping each other 3" and overlapping base flashing 4".

Separate base flashing pieces are woven into each shingle course placed just short of the overlaying shingle butt and nailed to the sheathing through the upper end



Flashing - Brick Wall at Top

Cap flashing pieces are inserted between brick courses, lapping each other 3" and overlapping base flashing 4".

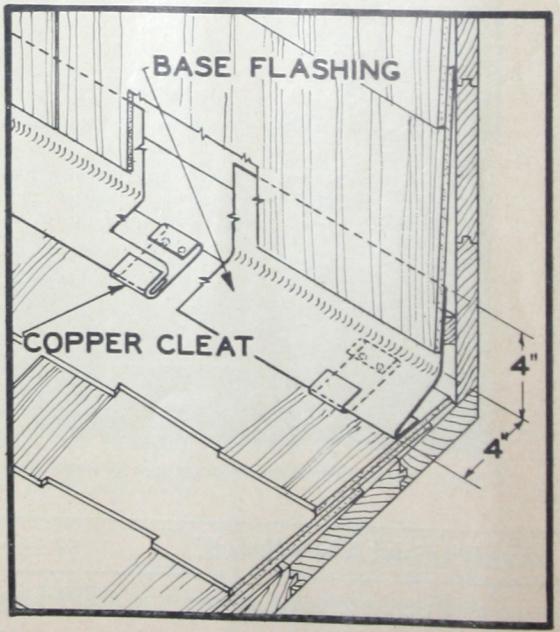
Base flashing extends 4" over shingles with lower edge folded under ½" for rigidity.

Secure exposed base flashing with cleats 12" o.c.

Flashing - Shingle Wall at Top

Base flashing is carried up 4" under wall shingles and secured with copper nails. Base flashing extends 4" over shingles with lower edge folded under ½" for rigidity.

Secure exposed base flashing with cleats 12" o.c.

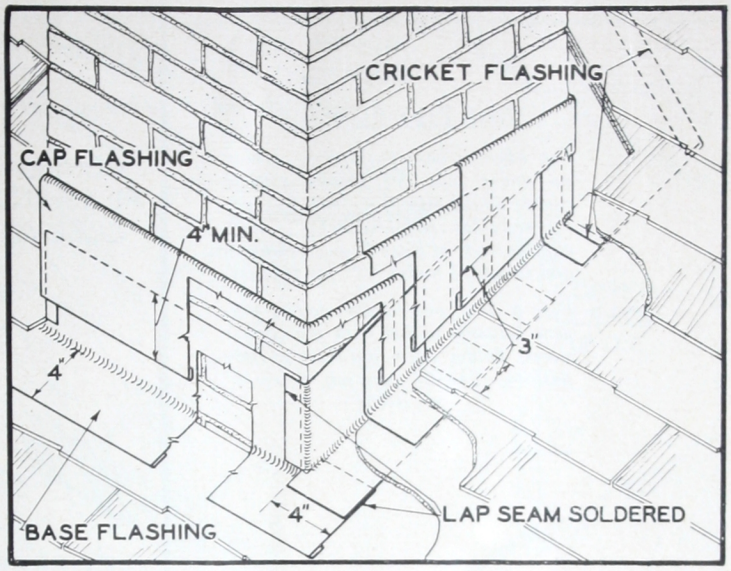


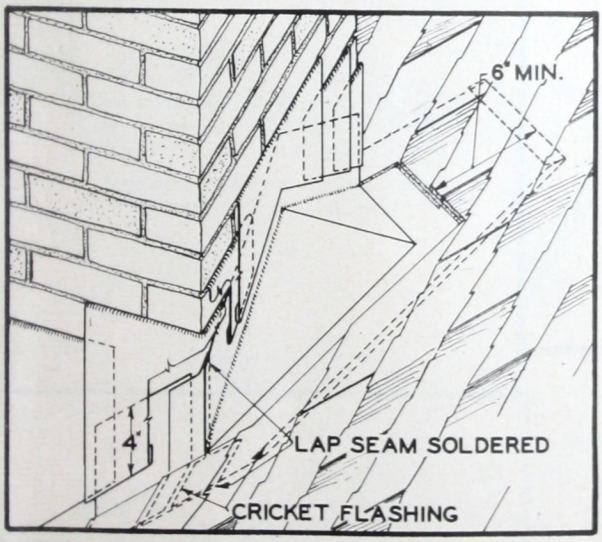
Chimney Flashing

Cap flashings should be inserted as chimney is built to lap base flashing at least 4". Lay shingles up to chimney. Set front base flashing to extend over shingles and to each side at least 4".

Separate base flashing pieces are woven into each shingle course, placed just short of the overlaying shingle butt and nailed to the sheathing through the upper end.

All laps to be not less than indicated





Cricket or Saddle Flashing

Cap flashing should be inserted as chimney is built to lap base flashing 4".

Where cricket flashing laps base flashing the seam is soldered.

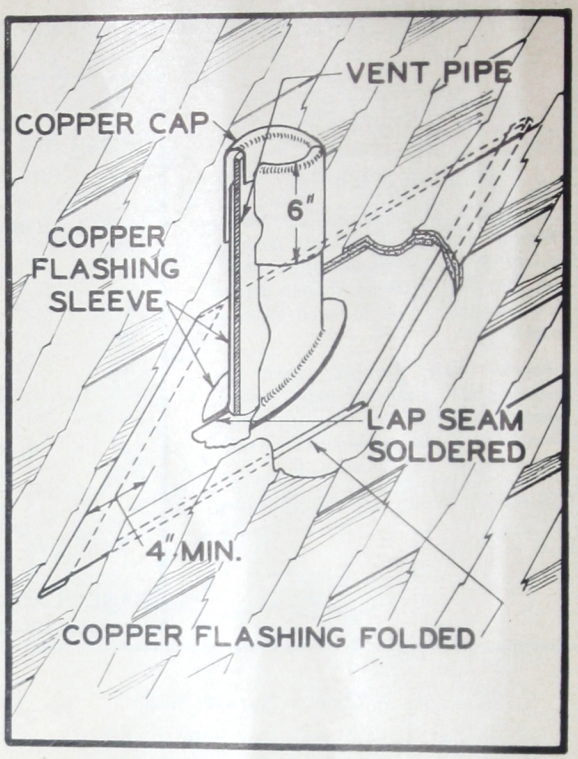
Cricket flashing is carried up under shingles at least 6" and folded ½"

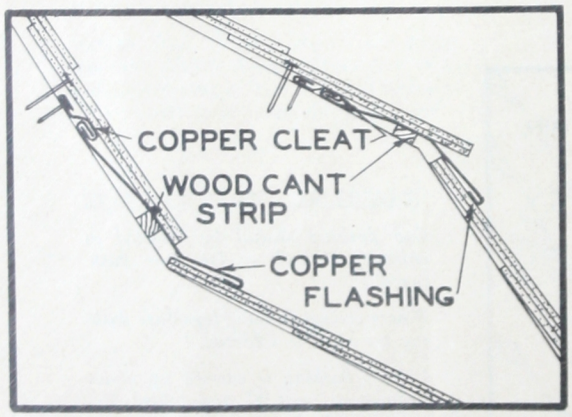
* Adaptations of similar details published by such authorities as the Copper and Brass Research Association, Revere Copper and Brass, Inc., etc.

Vent Pipe Flashing

Top edge of base flashing is carried up under butts of second shingle course above pipe. Top edge and unexposed sides are folded in ½". Lower edge extends at least 4" over shingles and is folded under ½" for rigidity.

Pipe is first covered with felt to prevent galvanic action with the copper sleeve. Solder sleeve lap seam to base flashing. The 6" cap sets down 4" on sleeve





Change of Slope

Flashing extends under shingles as far as possible without being pierced by shingle nails.

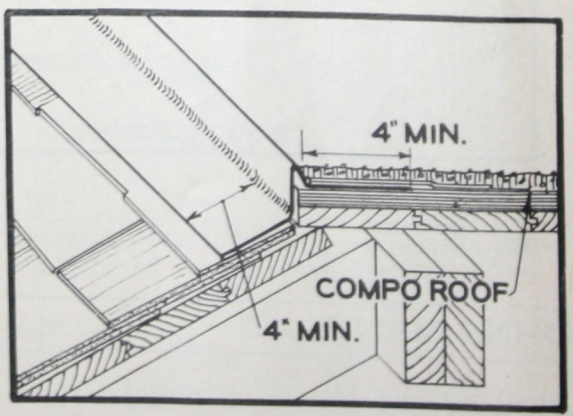
Extend flashing at least 4" over shingles to cover nail holes

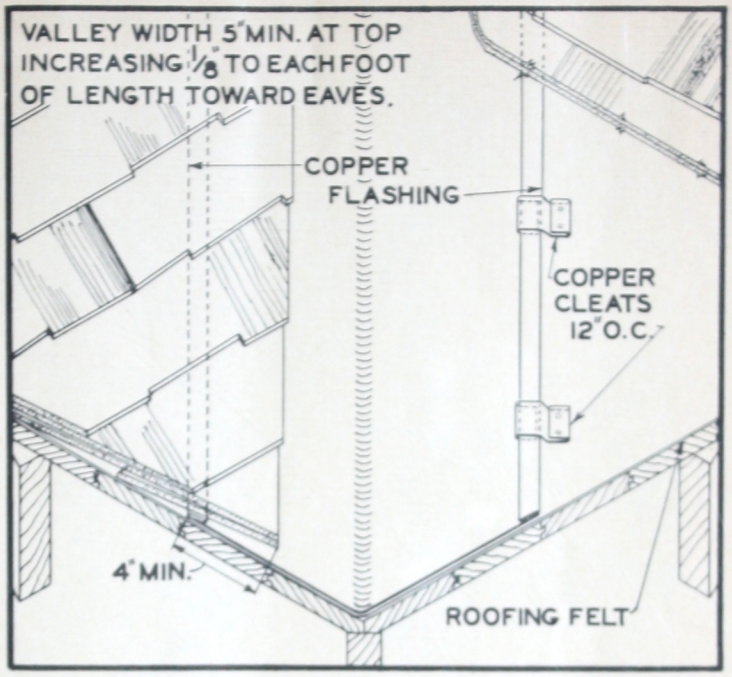
Flat Deck Flashing

Flashing extends over deck felt 4" to 6" and is secured into sheathing with copper nails.

Cover flashing with two plys of felt extending 6" beyond edge of flashing on deck.

Crimp copper to act as gravel stop. Extend bottom edge of flashing at least 4" over shingles



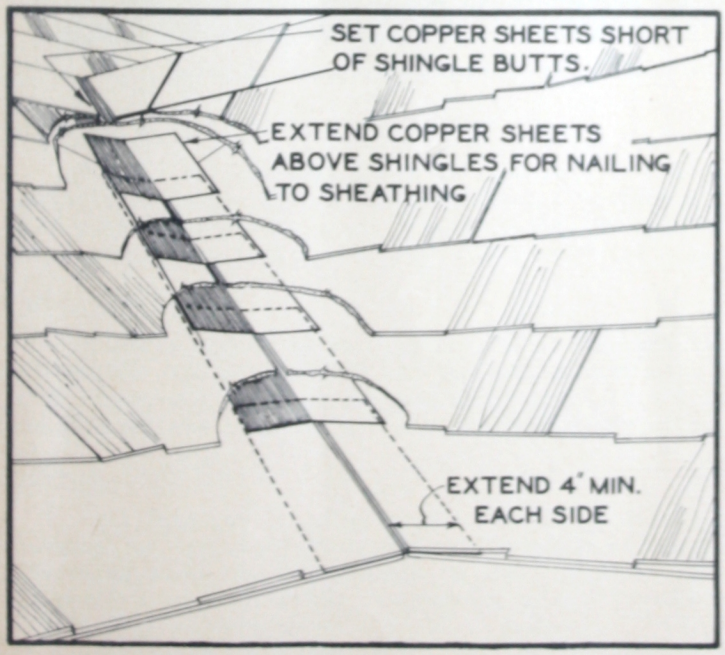


Open Valley Flashing

Valley sheets to be not less than 16-oz. copper, not exceeding 8 feet in length, and of sufficient width for increasing exposure toward eave as shown.

Nail sheets at top edge only, using copper nails 3" o.c.

Succeeding sheets to be lapped 6" leaving laps unsoldered



Closed Valley Flashing

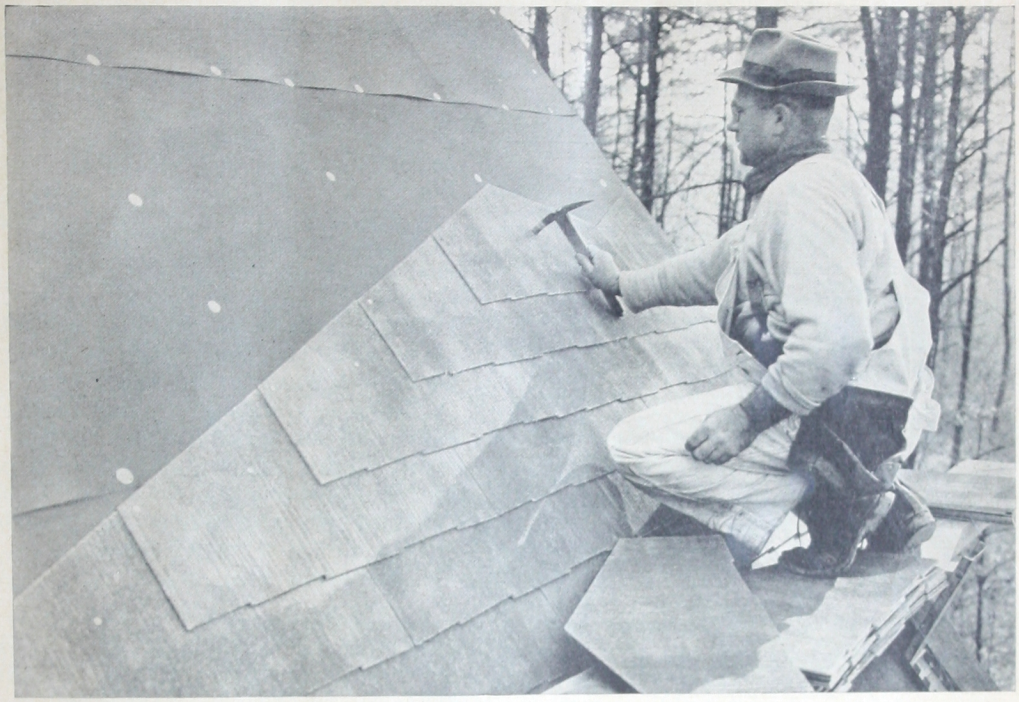
This type is recommended only for slopes of 45 deg or more.

Separate flashing pieces to lap each other 3" are woven into each shingle course, placed just short of the overlaying shingle butt and nailed to the sheathing through the upper end

* Adaptations of similar details published by such authorities as the Copper and Brass Research Association, Revere Copper and Brass, Inc., etc.

J-M NO. 607 AMERICAN COLONIAL (AMERICAN METHOD) ASBESTOS SHINGLES

APPLICATION DIRECTIONS



Fast-laying, strip-type American Colonial Shingles greatly reduce application costs

DESCRIPTION:

J-M No. 607 American Colonial (American Method) Shingles are designed for application on new or old roofs, pitched or sloped not less than 5" to the foot. Four galvanized needle-point shingle nails are required per shingle: 1-1/4" long for new work and 2" long for re-roofing over old wood shingles.

GENERAL:

Shingles should be handled carefully and kept in a dry place. They should be stacked on edge at least 4" off the ground, not more than 4 tiers high and covered with waterproof paper or tarpaulin for protection from moisture or dampness. These precautions are to guard against blooming or frosting (efflorescence).

CAUTION:

Ventilate new buildings while plaster is drying by opening windows in the basement or the first floor and in the attic to remove the damp air which might otherwise cause the roof boards to swell or warp. Cross-ventilation in the attic is particularly desirable to overcome such difficulties.

Do not hit nails the last lick. Space shingles not less than 1/16" apart at end joints.

PREPARATORY WORK:

New Work: Roof sheathing shall be dry, well seasoned, uniform thick boards, preferably not more than 6" wide and tongued and grooved, laid close and properly secured with at least two nails at each rafter. If roof boards in excess of 6" wide are used, they may cause the shingles to "cock" or buckle.

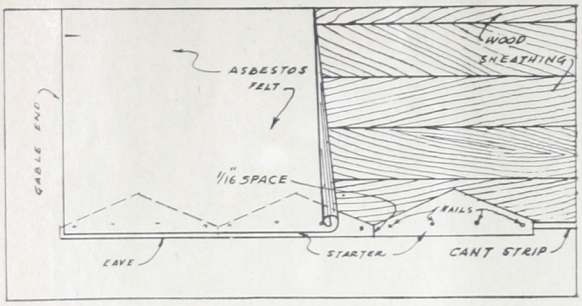


Fig. 1

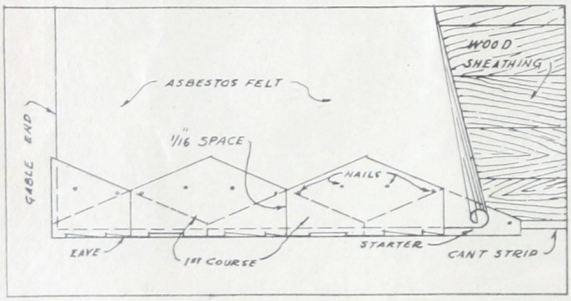


Fig. 2

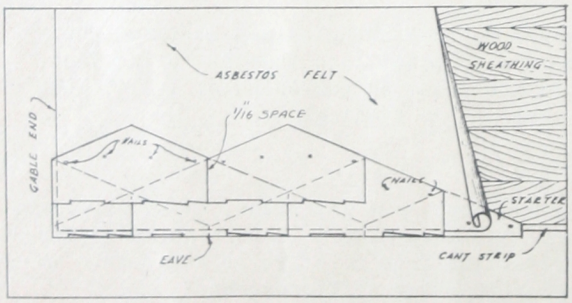


Fig. 3

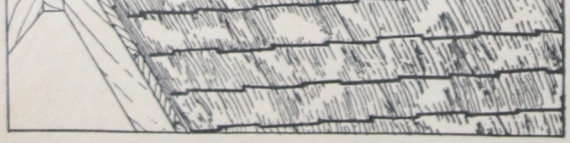


Fig. 4

Apply furring strips flatwise, one each side of ridge or hip, these strips to be 2" wide and of sufficient thickness to bring top of furring level with main body shingles. (See Fig. 4.)

Back of gutter or cornice mouldings shall project 1/4" above the roof boarding (see Fig. 1) to act as a cant for shingles, or a lath (1/4" x 1-1/2") shall be provided nailed flush with the lower edge of roof board and parallel to same.

Where overhang of dormers meets main roof surface, a space of 1/2" shall be left or the roof sheathing of the dormers shall be left out the width of the overhang until the asbestos shingles have been applied to the main roof.

Old Work: Before applying asbestos shingles over old wood shingles, care shall be taken to see that the ends of "curled" or "kicked-up" shingles are nailed down. Badly split or decayed wood shingles shall be removed and new ones inserted to insure proper anchorage for shingle nails.

In some instances, the head of the shingle may not get proper bearing on the old wood shingles, resulting in the butt "cocking-up". Where this condition exists throughout an entire course, nail ordinary wood lath butted end to end, to support the top edge of the shingles.

Where the old shingles are in such bad condition that they will not hold nails, beveled wood strips, approximately 4" wide by 3/8" thick at butt, may be placed with the 3/8"-thick edge against the butts of the old shingles and securely nailed in place.

Remove the existing shingles or boards with which the ridge or hips have been finished, and apply furring strips as described under new work.

Fill in old valleys with wood strips to bring them flush with the old wood shingles. At eaves and gables, if desired, the old shingles may be cut away for a width of 3" or 4" and a

wood strip of the same width as the cut-out inserted and securely nailed. This will eliminate all traces of the old roof in the finished job.

The same results can be obtained by applying a new moulding at the eaves or gables, cutting old shingles back to the line of the existing moulding and applying the new moulding against the cut edges of old shingles with the upper face on a line with the underside of the new shingles.

CUTTING SHINGLES:

Shingles can be cut and punched with an Asbestos Shingle Cutter. A cutter for 30"-wide shingles is available.

APPLICATION:

On both old and new work, the roof should first be covered with Asbestos Slater's felt, or not less than a 14 lb asphalt saturated asbestos felt laid with a 4" horizontal lap, 12" vertical lap, and also a 12" lap on hips, ridges and valleys.

Where winter weather is extremely severe, extra care shall be taken in laying shingles on lower portion of roofs as a precaution against leaks caused by snow and ice "backing up" from gutters. In some localities, sheet metal is laid instead of shingles from the eaves line up to a point directly above the inside line of exterior walls – that part of roof which extends beyond the heated portions of house.

Starter Course: Lift up the edge of the felt at the eaves and lay starter course. Begin with a full sized No. 636 asbestos cement starter, overhanging the eaves and gable approximately 1" and secured with four galvanized nails. Do not hit nails the last lick. (See Fig. 1.) Succeeding starters to be laid in a straight line parallel to the eave and SPACED 1/16" APART.

First Course: The first course of main roof shingles is laid directly over the starter course beginning with a half shingle with the vertical edge of same projecting 1" beyond the gable, and the staggered butt edge projecting approximately 1" beyond the eaves. (See Fig. 2.) Each succeeding shingle to be laid in a straight line parallel to the eave and SPACED 1/16" APART. Secure with four galvanized roofing nails to each shingle, driving nails up until their heads are just touching the shingle surface. Tightly driven nails may cause shingles to "cock", while loosely driven nails may permit shingles to rattle.

Second and Succeeding Courses: The second course of main body shingles is laid starting with a full-size shingle so that the shoulder coincides with the point of the underlying course (see Fig. 3). In this way, the 6" exposure is automatically obtained. Succeeding courses are started with a half-size shingle, then a full-size shingle, alternating with each course. Where the roof area is broken by dormers, a chalk line should be used to assure proper alignment and correct meeting of the courses above the dormers.

Ridge and Hip Finish: Lay roof shingles so that they butt closely against the furring strips at hips and ridges. Cover furring strips with the asbestos felt and apply the No. 697 Hip and Ridge shingles (see Fig. 4). Start laying the ridge shingles on main roof at that end of the ridge farthest away from prevailing storms. On dormers, start the ridge shingles at the face of the dormer, working back to the valleys. When covering hips, start at the lower end of the hip. Fasten each shingle with two nails driven into the wood strips and lap side edges alternately left and right over ridge or hip line as shown, and point up with Asbestos Roof Putty.

Valleys and Flashings: The use of copper or other non-corrodible metal for the lining of valleys and for flashings is recommended.

REMOVING AND REPLACING BROKEN SHINGLES:

To remove a shingle, slip a nail ripper under the broken shingle; hook it around each nail and strike the offset (see Fig. 5). This procedure will cut or draw the nails

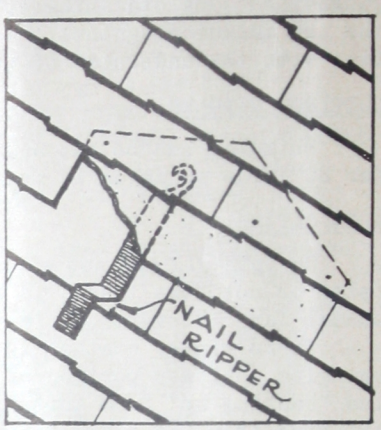


Fig. 5



Fig. 6

Remove broken shingle and replace it with a new one. Drill hole through joint of overlying shingle and drive nail flush with face of new shingle. Slip a small piece of copper up between shingles and over new nail head. Bend strip slightly so it will hold itself in place (see Fig. 6)

SKETCHING AND ESTIMATING INSTRUCTIONS
ASBESTOS AND ASPHALT SHINGLES AND READY-TO-LAY ROOFING

ROOFING

General: Estimators will find a quick yet accurate method of arriving at roofing quantities and selling prices without the necessity of "counting" courses or climbing on the roof by observing the following instructions.

1. Draw a Sketch. Outline of the foundation and all projecting portions, including porches, to be roofed.

2. Compute the "flat" or ground area in square feet. This is easily developed by multiplying the width by the length for rectangular houses. If the house is "ell" shaped with one or more projections, the separation of the sketch into logical rectangles, when multiplied separately and added together, will give the "flat" area.

3. Select the type of roof. It may be Gable, Hip, Dutch Colonial, Plain, Cut-Up with Dormers, or include two separate types, such as a gable and hip in the same roof. This can be determined by observation. See figure 1.

4. Determine the roof pitch. This is the slope or rafter length which increases as the ridge height increases and can best be explained by the diagram of a 20-ft. wide roof cross section which also shows the ridge heights, pitches and rafter lengths. See figure 2.

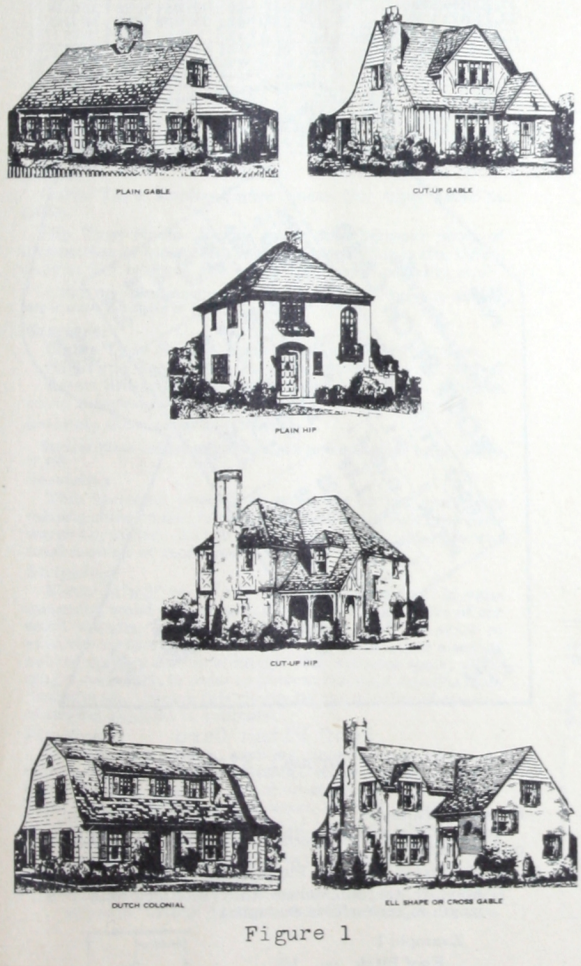


Figure 1

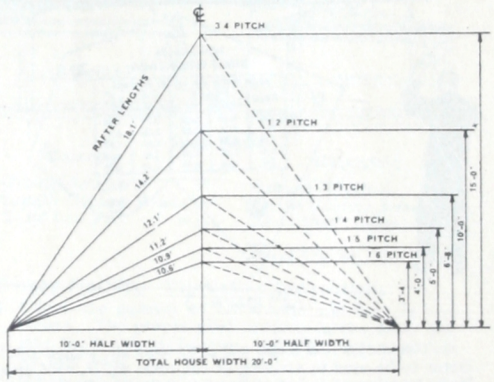


Figure 2

By observing the above diagram it can be seen that in a house 20 ft. wide the rafter lengths and ridge heights vary as follows:

	*Rafter Length	Ridge Height
1/6 pitch becomes	21'1"	3'4"
1/5 pitch becomes	21'9½"*	4'0"
1/4 pitch becomes	22'5"	5'0"
1/3 pitch becomes	24'2½"	6'8"
1/2 pitch becomes	28'5"	10'0"
3/4 pitch becomes	36'2½"	15'0"

*These dimensions are correct to the nearest common builders fraction.

5. Determine the overhang: This is the distance which the roof projects beyond or over the wall line.

6. Miscellaneous Accessories: Items such as starters, ridge, valleys, gutters, flashings, etc., can be easily estimated after the previous steps have been performed.

Sketching and Estimating:

1. Use the J-M Roof Estimate Sketch blank (95-168) and draw an outline of the foundation including roofed porches and other roofed portions which may extend beyond the foundation.
2. Determine the roof overhang (the distance the roof projects over the wall line).
3. Insert the dimensions of the foundation plus roof overhang on the sketch.

JOHNS-MANVILLE Building Materials

Sketching and Estimating Instructions
Asbestos and Asphalt Shingles and Ready-to-Lay Roofing

DATE July, 1938
(Cancelling BMR-955 & 955.1 dated in 1937)

BMR-956

PRINTED IN U. S. A.

TECHNICAL DATA SECTION

4. Determine the type of roof (by observation), see figure 1 and note it on the sketch blank.

5. Determine the roof pitch by means of the J-M Pitch Card and insert on sketch blank.

To use the pitch card, stand 50 to 100 feet away from the building in order to see roof peak. Hold pitch card by its round edge, at eye level. Focus the angles of the card with the ridge or peak of the roof until the angle that corresponds with the peak is found. See figure 3.

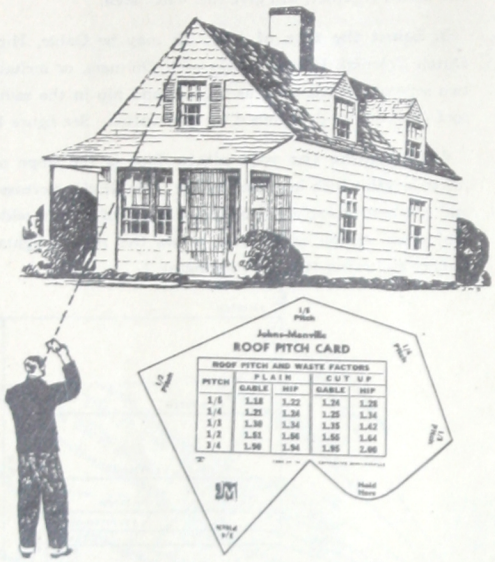


Figure 3

6. The major roof slope will determine the proper pitch factor to be used in arriving at the total sq. ft. roof area. Refer to columns 1, 2, 3, 4 and 5 in following factor table. These pitch factors are also found on the J-M Pitch Card.

If there are dormers on the roof, and their pitch is the same as or less than the pitch of the roof, the waste allowance, for cut-up roofs, will cover the area of the dormer roofs. If porches are to be roofed, figure roof area in the same manner.

Table Which Includes Allowances for Pitch and Waste in Columns 2, 3, 4 and 5 Also Hip and Rafter Length

Col. 1	Col. 2 Plain Roofs	Col. 3	Col. 4 Cut-up Roof	Col. 5	Col. 6 Main Hip	Col. 7 Rafter	Col. 8 Short
Pitch	Gable	Hip or Cross Gable	Gable	Hip	Length Factor	Length Factor	Hip Factor
1/6	1.15	1.19	1.21	1.25	.75	1.06	1.50
1/5	1.18	1.22	1.24	1.28	.75	1.09	1.50
1/4	1.21	1.24	1.25	1.34	.75	1.12	1.50
1/3	1.30	1.34	1.35	1.42	.78	1.21	1.56
1/2	1.51	1.56	1.55	1.64	.87	1.42	1.74
3/4	1.90	1.94	1.95	2.00	1.03	1.81	2.06

7. Multiply the total "flat" area by the proper pitch factor to find number of squares of roofing required. (Adjust to nearest square, half square or bundle.)

Houses having two pitches or "double pitch," such as "dutch colonials," which are usually 1/3 and 3/4 pitch. Results sufficiently accurate can be obtained by adding the two pitch factors together and dividing by 2 to find the unknown factor.

For example: The dutch colonial house, 24′ x 30′, has a flat area of 720 sq. ft. It has a double pitch, approximately one half of the slope is 1/3 pitch and the other half 3/4 pitch. It is a plain gable type roof.

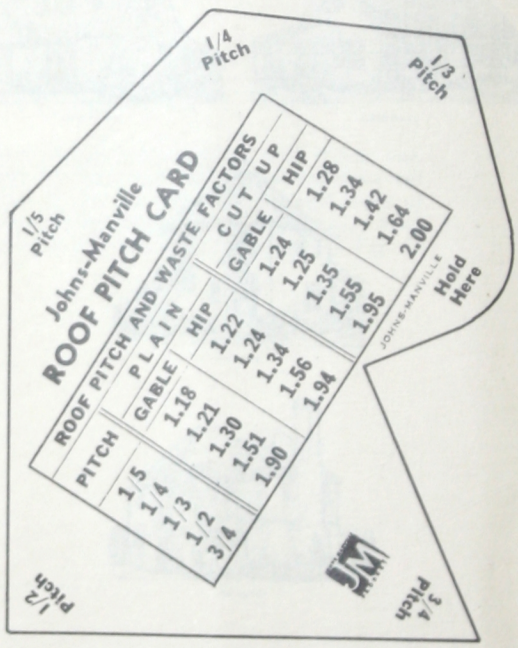
Solution: The 1/3 pitch factor is—1.30
The 3/4 pitch factor is—1.90

The new factor is 3.20÷2 or 1.60
Multiply 720 sq. ft. by 1.60=1152 sq. ft. or 11 1/2 squares

Dormer Areas: Where dormers only are to be re-roofed, or where the sides of dormers are to be finished with siding or roofing, the table below will be found convenient.

DORMER ROOF AND SIDE AREAS
(For 1/2 Pitch Roofs)

Feet Width	No.Wds.	Lift Type sq. ft. Roof	Lift Type sq. ft. Wall	Lift Type lin. ft. Ridge	Lift Type lin. ft. Starter	Gable Type sq. ft. Roof	Gable Type sq. ft. Wall	Gable Type lin. ft. Starter	Gable Type lin. ft. Ridge	Hip Type sq. ft. Roof	Hip Type sq. ft. Wall	Hip Type lin. ft. Starter	Hip Type lin. ft. Ridge & Hips
5	1	79	88	..	6	60	60	10	12	69	52	20	18
6	1	93	94	..	7	72	70	10	12	85	58	22	19
7	1	106	100	..	8	80	80	10	12	97	64	22	20
8	2	119	88	..	9	86	70	10	12	103	52	24	21
9	2	132	94	..	10	94	75	10	12	116	58	26	22
10	2	145	100	..	11	100	85	10	12	128	64	28	23
11	2	159	106	..	12	110	90	10	12	144	70	32	24
12	3	172	93	..	13	120	80	10	12	159	57	32	25



Roof Pitch Card
Actual Size

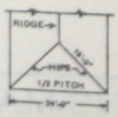
Hips and Valleys:

To find hip or valley lengths to nearest larger 6″ or foot, proceed as follows:

1. Find pitch with J-M Pitch Card.
2. Measure the side where they intersect, and find length in table. (See example 1)

Example 1

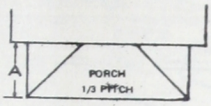
Roof Pitch — 1/3
Width — 24′
Hip Length = 19′ Ans.



3. Where they do not intersect, measure the side where they join the building. (See "A," ———) and **double the amount given in table.** (See Example 2.)
4. Always include overhang in measurement.

Example 2

Roof Pitch 1/3
Width "A" 8'
Double 6'-6" (The Table Figure) = 13' Ans.



HIP AND VALLEY TABLE

Wth Ft.	ROOF PITCH Up to 1/4	Up to 1/3	Up to 1/2	Up to 3/4	Wth Ft.	ROOF PITCH Up to 1/4	Up to 1/3	Up to 1/2	Up to 3/4
	Linear Feet of Hip or Valley					Linear Feet of Hip or Valley			
4′	3′0″	3′6″	3′6″	4′6″	25′	19′0″	19′6″	22′0″	26′0″
5′	4′0″	4′0″	4′6″	5′6″	26′	19′6″	20′6″	23′0″	27′0″
6′	4′6″	5′0″	5′6″	6′6″	27′	20′6″	21′0″	23′6″	28′0″
7′	5′6″	5′6″	6′6″	7′6″	28′	21′0″	22′0″	24′6″	29′0″
8′	6′0″	6′6″	7′0″	8′6″	29′	22′0″	23′0″	25′6″	30′0″
9′	7′0″	7′0″	8′0″	9′6″	30′	22′6″	23′6″	26′0″	31′0″
10′	7′6″	8′0″	9′0″	10′6″	31′	23′6″	24′6″	27′0″	32′0″
11′	8′6″	8′6″	10′0″	11′6″	32′	24′0″	25′0″	28′0″	33′0″
12′	9′0″	9′6″	10′6″	12′6″	33′	25′0″	26′0″	29′0″	34′0″
13′	10′0″	10′6″	11′6″	13′6″	34′	25′6″	26′6″	30′0″	35′0″
14′	10′6″	11′0″	12′6″	14′6″	35′	26′6″	27′6″	30′6″	36′0″
15′	11′6″	12′0″	13′0″	15′6″	36′	27′0″	28′0″	31′6″	37′0″
16′	12′0″	12′6″	14′0″	16′6″	37′	28′0″	29′0″	32′6″	38′6″
17′	13′0″	13′6″	15′0″	17′6″	38′	28′6″	30′0″	33′0″	39′6″
18′	13′6″	14′6″	16′0″	18′6″	39′	29′6″	30′6″	34′0″	40′6″
19′	14′6″	15′0″	16′6″	20′0″	40′	30′0″	31′6″	35′0″	41′6″
20′	15′0″	16′0″	17′6″	21′0″	41′	31′0″	32′0″	36′0″	42′6″
21′	16′0″	16′6″	18′6″	22′0″	42′	31′6″	33′0″	37′0″	43′6″
22′	16′6″	17′6″	19′6″	23′0″	43′	32′6″	33′6″	37′6″	44′6″
23′	17′6″	18′0″	20′0″	24′0″	44′	33′0″	34′0″	38′6″	45′6″
24′	18′0″	19′0″	21′0″	25′0″	45′	34′0″	35′0″	39′6″	46′6″

Ridge:

Gable Type Roofs—Figure linear feet from gable to gable.

Hip Type Roofs—Figure linear feet between point of intersection of hip rafters with the ridge (this is the difference in feet between the width and length of a hip roof).

CAUTION: When estimating Hips and Ridges, figure to nearest larger square, bundle or roll.

Starters:

Gable Type Roofs—Double the linear feet of ridge.

Hip Type Roofs—Lin. ft. of entire exposed edge of roof.

Eaves Shingles—For some types of asbestos shingles, eaves shingles, in addition to starters, are required. —— (estimate them same as starters)

Caution: When estimating Starters, figure to nearest larger square, bundle or roll.

Servicing:

This operation consists of replacing on old roofs, any missing shingles and re-nailing any others which may have warped or curled. Add the service charge per square for the total number of roof squares.

Stripping:

Either ½″x 3″ or ½″x 4″ wood bevel strips, or, in some instances, wood mason lath, are nailed at the butts of old wood shingles, particularly for asphalt roofs, in order to even the surface so that the new roofing will have a secure nailing and lay flat indefinitely. For asbestos roofs, stripping is necessary, in order to prevent the rigid shingles from "cocking up." Figure this charge by the number of squares of roofing and add to estimate.

Flashings:

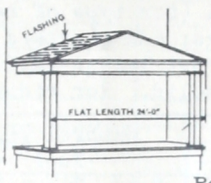
Building projections, such as porches, bay windows, entrances, garages, wing buildings, solariums, etc., require flashing where they join the main structure. To estimate linear feet, including lap and waste, proceed as follows:

1. Determine pitch and type of roof, i.e., gable or hip.
2. **Gable Roofs**—Measure ground or **flat length** and find total lin. ft. of flashing in table opposite "Length" column. (See Example 1.)
3. **Hip Roofs**—Measure width and find length of both slopes in **"width"** column. Add "flat" length which is found by subtracting **twice the width** from the total length. (See Example 2.)
4. Always include overhang in measurements.

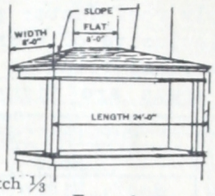
FLASHING TABLE

Width	Length	ROOF PITCH 1/5	1/4	1/3	1/2	3/4	Width	Length	ROOF PITCH 1/5	1/4	1/3	1/2	3/4
		Linear Feet of Flashing							Linear Feet of Flashing				
3	6	8	8	8	10	13	17	34	38	39	42	50	63
4	8	10	10	11	13	16	18	36	40	41	45	52	67
5	10	12	12	13	15	20	19	38	42	44	47	55	70
6	12	15	15	16	18	24	20	40	45	46	49	58	74
7	14	17	17	18	21	27	21	42	47	48	52	61	78
8	16	19	19	20	24	31	22	44	49	50	54	64	81
9	18	21	21	23	27	34	23	46	51	53	57	67	85
10	20	23	23	25	30	38	24	48	53	55	59	69	89
11	22	25	26	28	33	42	25	50	55	57	62	72	92
12	24	27	28	30	35	45	26	52	58	59	64	75	96
13	26	30	30	33	38	49	27	54	60	61	66	78	100
14	28	32	32	35	41	53	28	56	62	64	69	81	103
15	30	34	35	37	44	56	29	58	64	66	71	84	107
16	32	36	37	40	47	60	30	60	66	68	74	86	111

Gable Type Roof



Hip Type Roof



Roof Pitch ⅓

Example 1

Ground Length is 24′
Length Column Reads 30′
Total Lin. Ft. = 30′

Example 2

Ground Width is 8′
Width Column Reads 20′
Add "Flat" Length 8′

Total Lin. Ft. = 28′

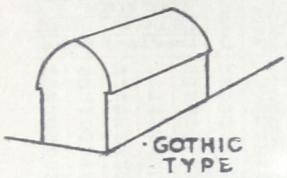
Chimney Flashing—Estimating Instructions:

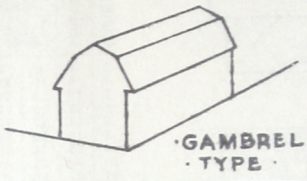
1. Count the number of brick wide and long in one course. The proper pitch column in the table will give the lin. ft. of flashing, including waste and lap for four sides.
2. Where only three sides are flashed, such as a chimney on the side of a house, deduct the number of inches to the nearest foot corresponding with the number of brick on the unflashed side.
3. Where chimneys are to be equipped with a "saddle" or "cricket", to divert water or snow, deduct the number of inches to the nearest foot corresponding with the number of brick on the side affected, and to the remaining flashing, add the saddle price.
4. Stucco and stone chimney dimensions may be determined either by actual measurement or observation.

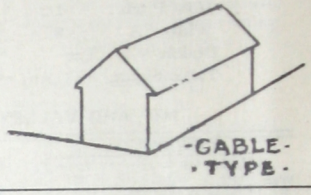
CHIMNEY FLASHING TABLE

No. of Brick Wide	No. of Brick Long	Inches Wide	Inches Long	Pitch of Roof to1/3	to1/2	to3/4	No. of Brick Wide	No. of Brick Long	Inches Wide	Inches Long	Pitch of Roof to1/3	to1/2	to3/4
				Linear Feet of Flashing							Linear Feet of Flashing		
2	2	18″	18″	11	11	12	2½	2	22″	18″	12	12	13
2	2½	18″	22″	12	12	13	2½	2½	22″	22″	13	13	14
2	3	18″	26″	13	13	15	2½	3	22″	26″	14	14	15
2	3½	18″	30″	13	14	16	2½	3½	22″	30″	14	15	17
2	4	18″	34″	14	15	17	2½	4	22″	34″	15	16	18
2	4½	18″	38″	15	16	19	2½	4½	22″	38″	16	17	20
2	5	18″	43″	15	17	21	2½	5	22″	43″	16	18	22
2	5½	18″	47″	16	18	22	2½	5½	22″	47″	17	19	23
2	6	18″	51″	17	19	23	2½	6	22″	51″	18	20	24
2	6½	18″	55″	18	20	24	2½	6½	22″	55″	19	21	25
2	7	18″	60″	19	21	25	2½	7	22″	60″	20	22	26
2	7½	18″	64″	20	22	27	2½	7½	22″	64″	21	23	28
2	8	18″	68″	21	23	28	2½	8	22″	68″	22	24	29

Barn Roof Surface Estimating Tables







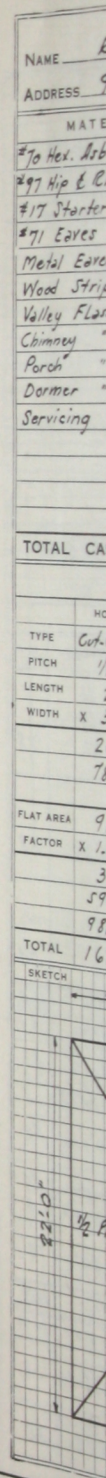
Tables (which include ample waste allowances) give length in feet over ridge from plate to plate.

Estimating: To find roof areas, measure width of barn, add overhangs, and find nearest corresponding larger width in tables below.

Multiply roof factor given (for type of roof being estimated) by the total length of barn inclusive of overhangs; add starters and ridge (figure 1 sq.ft. per lin.ft.) and adjust final total to nearest larger half or full square.

Gable areas are figured solid. For siding estimating deduct for windows or mow doors.

Barn Width	Gothic Type Roof			Gambrel Type Roof			Gable Type 1/3 Pitch Roof			Gable Type 1/2 Pitch Roof		
	Roof Factor	Ridge Hgt.	Gable sq.ft.	Roof Factor	Ridge Hgt.	Gable sq.ft.	Roof Factor	Ridge Hgt.	Gable sq.ft.	Roof Factor	Ridge Hgt.	Gable sq.ft.
10	17.6	6.5	40	16.0	5.56	36	12.6	3.33	17	14.7	5.0	25
11	19.4	7.2	49	17.6	6.10	43	12.9	3.67	20	16.1	5.5	30
12	21.2	7.8	58	19.2	6.76	52	15.2	4.00	24	17.6	6.0	36
13	23.0	8.4	68	20.8	7.22	60	16.4	4.33	28	19.1	6.5	42
14	24.7	9.2	78	22.4	7.80	70	17.7	4.67	35	20.6	7.0	49
15	26.5	9.7	89	24.0	8.33	80	19.0	5.00	38	22.0	7.5	56
16	28.2	10.4	102	25.6	8.90	91	20.2	5.33	43	23.5	8.0	64
17	30.0	11.0	114	27.2	9.45	103	21.4	5.67	48	25.0	8.5	72
18	31.8	11.7	130	28.8	10.00	116	22.6	6.00	54	26.5	9.0	81
19	33.4	12.3	144	30.4	10.55	129	24.0	6.33	60	28.0	9.5	90
20	35.2	13.0	160	32.0	11.20	144	25.2	6.67	67	29.4	10.0	100
21	37.0	13.6	176	33.6	11.80	159	26.4	7.00	74	30.8	10.5	110
22	38.8	14.3	193	35.2	12.35	174	27.8	7.33	81	32.3	11.0	121
23	40.6	14.9	210	36.8	12.90	189	29.0	7.67	88	33.8	11.5	132
24	42.0	15.6	230	38.4	13.50	206	30.3	8.00	96	35.2	12.0	144
25	44.0	16.2	250	40.0	14.10	225	31.5	8.33	103	36.8	12.5	156
26	46.0	16.8	268	41.6	14.60	244	32.8	8.67	113	38.2	13.0	168
27	47.9	17.6	290	43.2	15.20	262	34.0	9.00	122	39.7	13.5	182
28	49.4	18.1	313	44.8	15.70	281	35.4	9.33	130	41.2	14.0	196
29	50.6	18.8	338	46.4	16.30	302	36.6	9.67	140	42.5	14.5	210
30	53.0	19.4	358	48.0	16.90	324	37.8	10.00	150	44.0	15.0	225
31	55.0	20.0	382	49.6	17.40	346	39.2	10.33	161	45.5	15.5	240
32	56.5	20.7	410	51.2	18.00	368	40.3	10.67	170	47.0	16.0	255
33	58.0	21.5	445	52.8	18.60	394	41.6	11.00	182	48.5	16.5	272
34	60.0	22.2	465	54.4	19.20	415	43.0	11.33	192	50.0	17.0	290
35	62.0	22.6	487	56.0	19.70	440	44.2	11.67	204	51.5	17.5	306
36	64.0	23.4	518	57.6	20.20	466	45.5	12.00	216	53.0	18.0	324
37	65.8	24.0	550	59.2	20.80	492	46.7	12.33	228	54.5	18.5	342
38	67.0	24.7	578	60.8	21.40	516	48.0	12.67	240	56.0	19.0	360
39	69.0	25.2	605	62.4	21.95	545	49.2	13.00	254	57.5	19.5	380
40	70.4	26.0	640	64.0	22.60	578	50.5	13.33	266	59.0	20.0	400



J-M Asbestos and Asphalt Shingles

Sample Roofing Estimate Form - Asbestos Shingle Example:

ROOFING ESTIMATE FORM

NAME R. T. Burns — JOB LOCATION Same

ADDRESS 90 Oak Street, Rahway, N.J. — SALESMAN J. C. Brady — DATE 1/23/37

MATERIAL	SIZE	TYPE	QUANTITY	UNIT PR.	SELLING PRICE	REMARKS
#70 Hex. Asbestos Shingle	16" x 16"	Mottled Green	19 Sq.		Local Price	No Wood Stripping
#97 Hip & Ridge "	5" x 16"	" "	38 Bdls.		" "	
#17 Starter "	4" x 16"	" "	11 Bdls.		" "	
#71 Eaves "	20 15/16"	" "	9 Bdls.		" "	
Metal Eaves Strip	10"	16 oz. Copper	220 Lin. Ft.		" "	
Wood Strip	1" x 2"	For Hip & Ridge	189 " "		" "	
Valley Flashing	16"	16 oz. Copper	42 " "		" "	
Chimney "	10"	" "	16 " "		" "	
Porch "	10"	" "	30 " "		" "	
Dormer "	8"	" "	75 " "		" "	
Servicing			19 Sq.		" "	
TOTAL CASH SELLING PRICE					Local Price	

ROOF AREA

	HOUSE	HOUSE	PORCH	PORCH
TYPE	Cut-Up Hip		Plain Hip	
PITCH	1/2		1/2	
LENGTH	26		8	
WIDTH	x 38	x	x 22	x
	208			
	78			
FLAT AREA	988		176	
FACTOR	x 1.64	x	x 1.56	x
	3952		1056	
	5928		880	
	988		176	
TOTAL	1620		275	

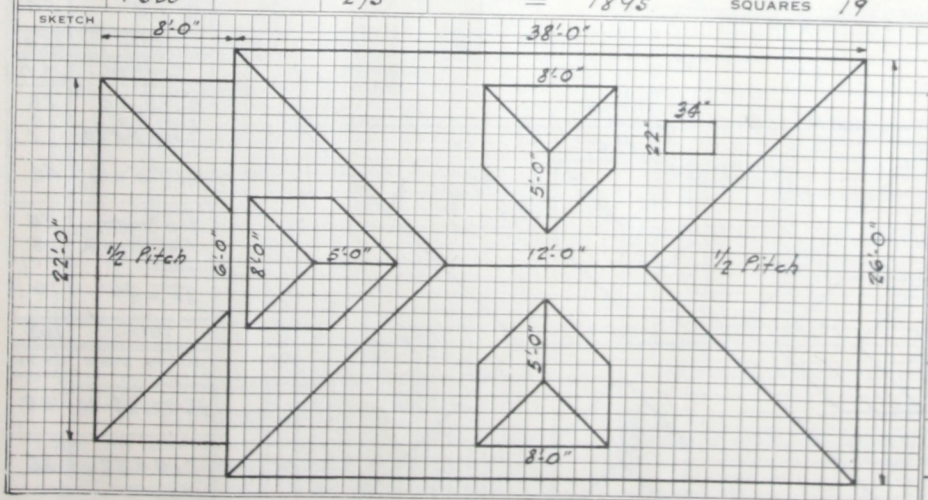
HIPS	LIN. FT.
HOUSE 26' = 23' x 4	92
PORCH 8 = 7'-0" x 4	28
DORMERS 8' = 7'-0" x 6	42
TOTAL	162

RIDGES	LIN. FT.
HOUSE 38 - 26	12
PORCH None	
DORMERS 5 x 3	15
TOTAL	27

STARTERS	LIN. FT.
HOUSE 38 26 38 26 76 + 52	128
PORCH 8 8 16 + 22	38
DORMERS 5 5 8 18 x 3	54
TOTAL	220

= 1895 SQUARES 19

SKETCH



FLASHING	LIN. FT.
DORMER 5 x 1.42 x 6 8 x 3 Lap 2'8" x 3	43 24 8
VALLEY 8' = 7'-0" x 6	42
PORCH 8'-0" Width Flat Length	24 6
CHIMNEY 22" x 34"	16
TOTAL	163

EAVES STRIP	LIN. FT.
HOUSE 38 + 26 + 38 + 26	128
PORCH 8 + 8 + 22	38
DORMER 3(5 + 5 + 8)	54
TOTAL	220

JOHNS-MANVILLE Building Materials

Asbestos and Asphalt Shingles - Sketching and Estimating Instructions - Sample, J-M Roofing Estimating Form (95-168)

DATE July, 1938
(Cancelling BMR-955.5 and 955.6 dated 1937)
BMR-958

PRINTED IN U.S.A.

J-M Asbestos and Asphalt Shingles

ample Roofing Estimate Form - Asphalt Shingle Example:

ROOFING ESTIMATE FORM

NAME R. T. Burns — JOB LOCATION Same

ADDRESS 90 Oak Street, Rahway, N.J. — SALESMAN J. C. Brady — DATE 1/23/37

MATERIAL	SIZE	TYPE	QUANTITY	UNIT PR.	SELLING PRICE	REMARKS
ient Ind. Asphalt Sh.	12"x16"	Spruce Green	19 sq.		Local Price	with wood stripping
" " Starters	12"x16"	" "	3 bdls.		" "	
" " Hip & Ridge	12"x16"	" "	8 "		" "	
ood Eaves Strip	1"x3"		220 Lin. Ft.		" "	
ervicing			19 sq.		" "	
himney Flashing	10"	16 oz. Copper	16 Lin. Ft.		" "	
orch "	10"	" "	30 " "		" "	
alley "	16"	" "	42 " "		" "	
ormer "	8"	" "	75 " "		" "	
OTAL CASH SELLING PRICE						

ROOF AREA

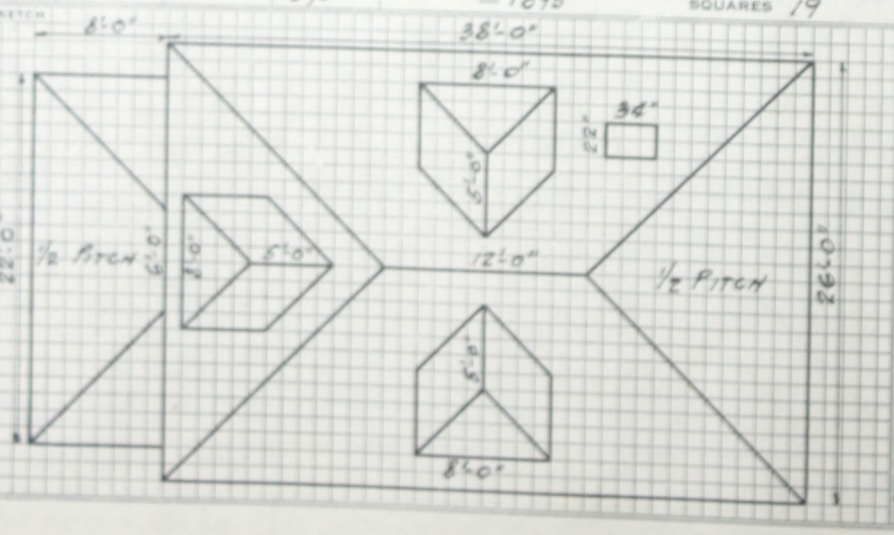
	HOUSE	HOUSE	PORCH	PORCH
YPE	Cut-up Hip		Plain Hip	
ITCH	1/2		1/2	
ENGTH	38		22	
IDTH	x 26	x	x 8	x
	228			
	76			
T AREA	988		176	
CTOR	x 1.64	x	x 1.56	x
	3952		1056	
	5928		880	
	988		176	
OTAL	1620		275	= 1895

HIPS	LIN. FT.	RIDGES	LIN. FT.	STARTERS	LIN. FT.
HOUSE 26' + 23'-0" x 4	92	HOUSE 38 - 26	12	HOUSE 38 26 / 38 26 / 76 + 52	128
PORCH 8' + 7'-0" x 4	28	PORCH None		PORCH 8 / 8 / 16 + 22	38
DORMERS 8' + 7'-0" x 6	42	DORMERS 5'-0" x 3	15	DORMERS 5 / 5 / 8 / 18 x 3	54
TOTAL	162	TOTAL	27	TOTAL	220

SQUARES 19

FLASHING	LIN. FT.
DORMER 5 x 1.42 x 6	43
8'-0" x 3	24
LAPS 2'-8" x 3	8
VALLEY 8' + 7'-0" x 6	42
PORCH 8'-0" width	24
Flat Length	6
CHIMNEY 22" x 30"	16
TOTAL	163

EAVES STRIP	LIN. FT.
HOUSE 38 + 26 + 38 + 26	128
PORCH 8 + 8 + 22	38
DORMER 3 x (5 + 5 + 8)	54
TOTAL	220



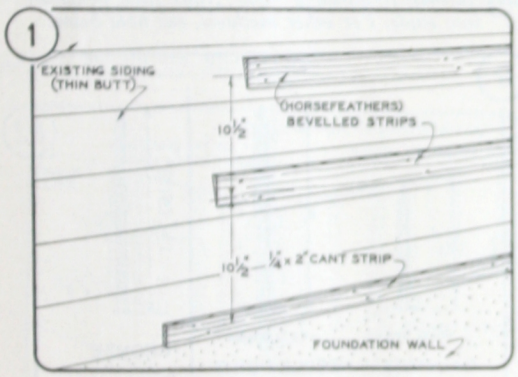
J-M ASBESTOS SIDING SHINGLES
APPLICATION DIRECTIONS

General: The following precautionary measures apply to all J-M Asbestos Siding Shingles.

1. Handle carefully.
2. Store in dry place.
3. Stack on edge no more than four tiers high.
4. Block up 4" off ground and cover with felt or tarpaulin.
5. Lay shingles in dry weather.
6. Prime paint all trim.
7. Have gutters in place before applying shingles.
8. To prevent rust or copper stains paint all metal, nails, etc., and varnish gutters, screens, etc.
9. NOT TO BE USED ON ROOFS.

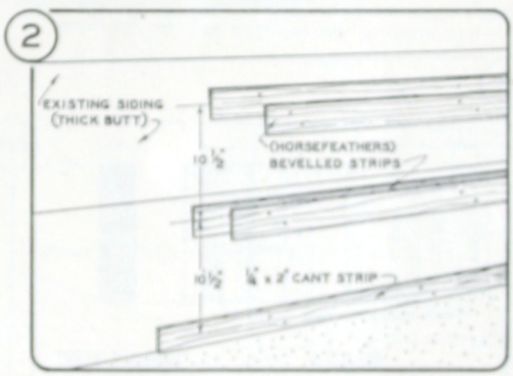
PREPARATION OF WALLS:

Wall surfaces shall be smooth, true and plumb. Nail all loose boards and shingles securely.



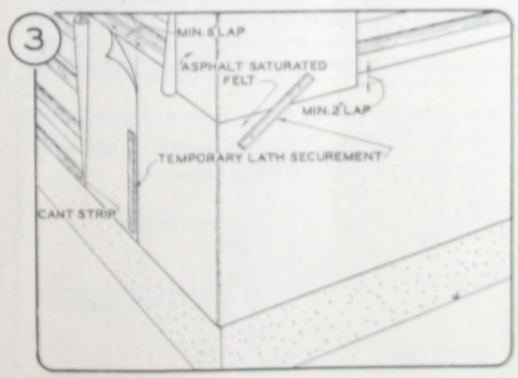
THIN-BUTT WOOD SIDING

Bevelled strips (horsefeathers) may not be required if wood-siding butts are thin or exposure is narrow



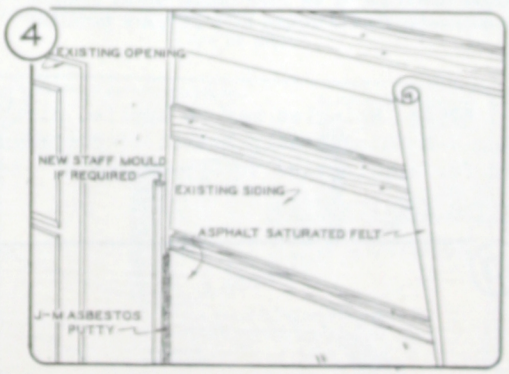
THICK-BUTT WOOD SIDING

Bevelled strips (horsefeathers) may have to be doubled if wood-siding butts are thick and exposure is wide



APPLICATION OF FELT

Cover only as much area as can be shingled in one day with asphalt-saturated felt lapped 2" at horizontal joints and 6" at vertical joints. Do not use tar-saturated felt



JAMB

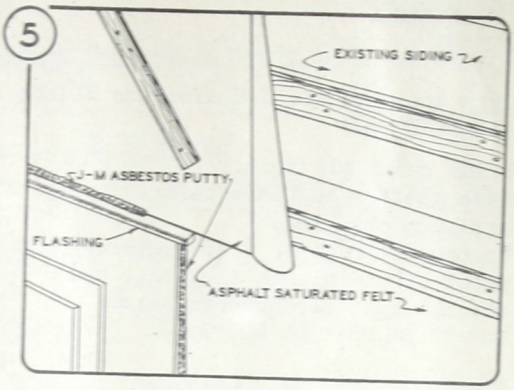
Carefully caulk with asbestos putty before applying shingles

JOHNS-MANVILLE Building Products

Application Directions for Asbestos Siding Shingles

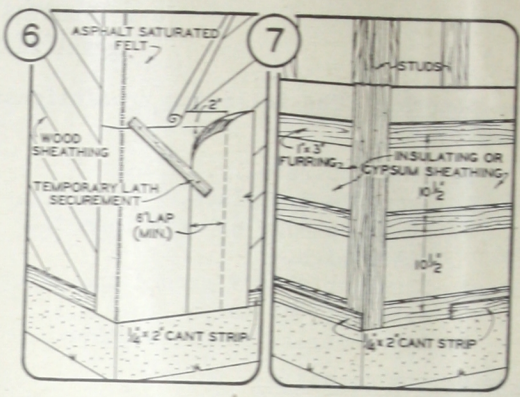
DATE June, 1948
(Cancelling sheet dated April, 1948)
BMR-989

PREPARATION OF WALLS (Continued):



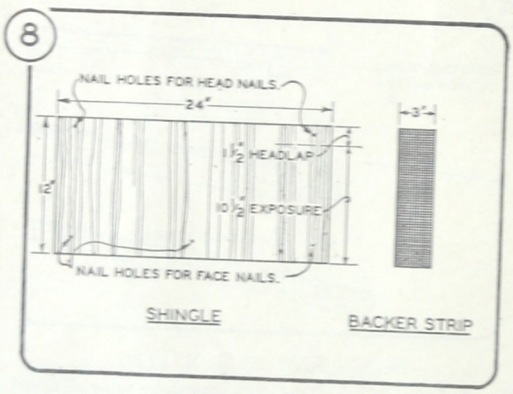
HEAD

Renew flashing over door and window openings, etc., where necessary and caulk with putty before applying shingles



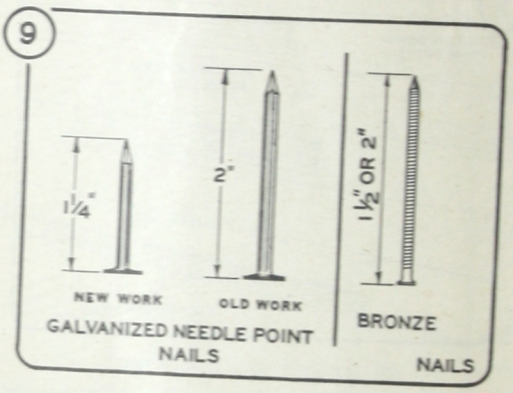
NEW WORK

Over wood sheathing, cover with felt and apply shingles directly over. . . . Over insulating or gypsum sheathing, apply furring strips 10½" O.C. Nails shall penetrate 1" into studs. For other methods, see note below



SHINGLE

Shingle size is 12" x 24". No special starter shingles are necessary. Backer strips, 3" x 12", are furnished

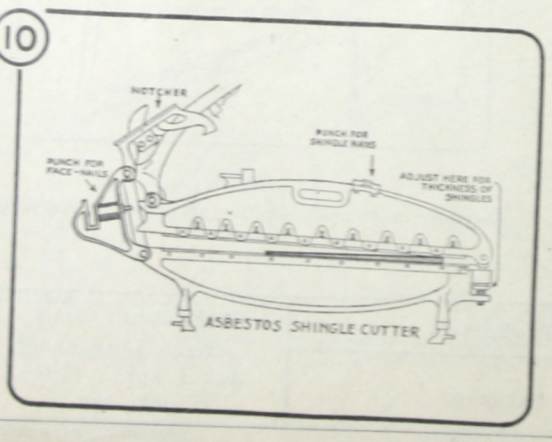


FASTENERS

For head-nailing use galvanized needle point nails, 1¼" long for new work; 2" long for re-siding. For exposed butt-nailing use bronze nails furnished for this purpose: 1½" long for new work; 2" long for re-siding

NOTE: Shingles may be applied directly to Insulating or Gypsum Board Sheathing using J-M Shingle Clip Method of Fastening. J-M Speed Clinch Fasteners may also be used for application to Gypsum Board. Separate directions are available.

CUTTING AND PUNCHING:

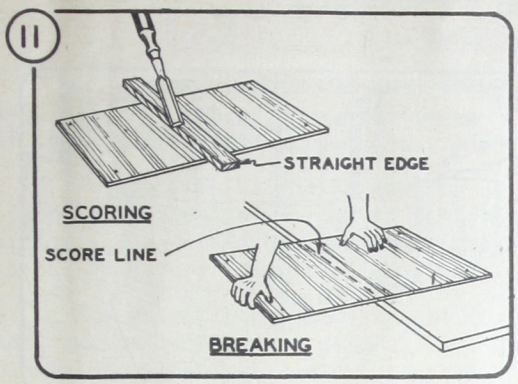


CUTTING

An asbestos shingle cutter assures rapid, efficient cutting, punching and notching

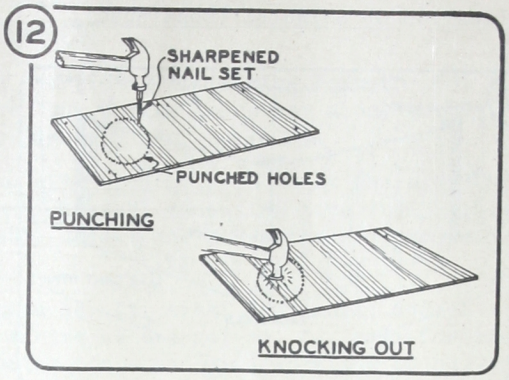
(Continued)

CUTTING AND PUNCHING (Continued):



CUTTING

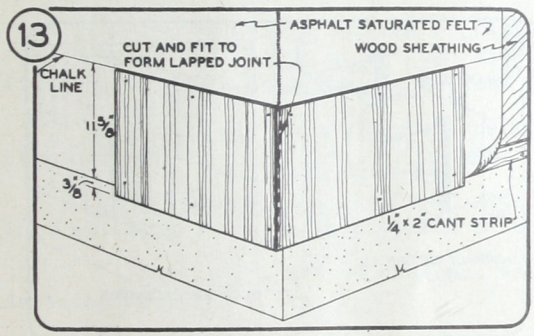
Alternate Method: Score shingle with edge of an old chisel or similar blade. Break as shown above



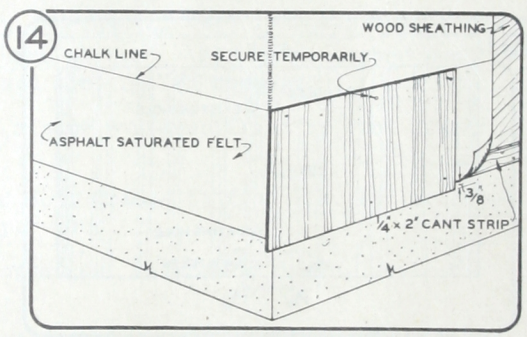
CIRCULAR AND ANGULAR CUTS

For circular and angular cuts, punch a series of holes approximately 1/8" apart along cut line using a sharpened nail set. Tap with hammer to knock out

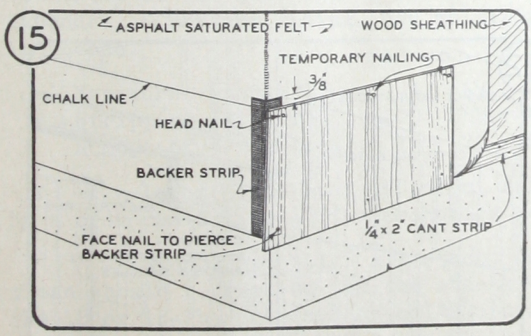
APPLICATION OF SHINGLES:



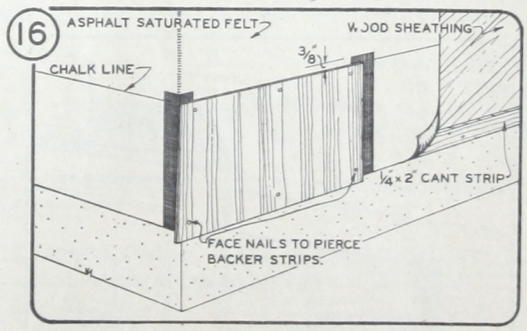
At outside corner place a whole shingle against each side wall, top edges at chalk line. Mark and cut adjoining vertical edges to form a lapped joint



Apply fitted shingle to project 3/8" below cant strip. Secure temporarily with head nail until felt backer strips are in place

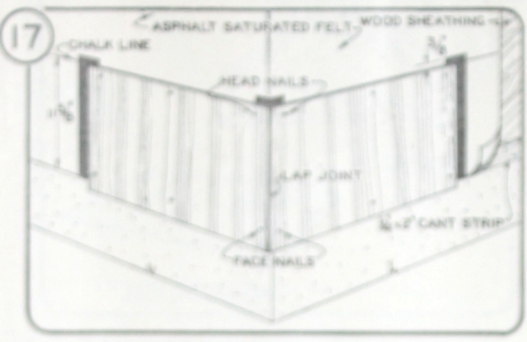


Fold a backer strip in half lengthwise. Slide one half behind fitted shingle projecting 3/8" above chalk line. Drive face-nail to pierce and hold backer strip in place. Then drive head-nail

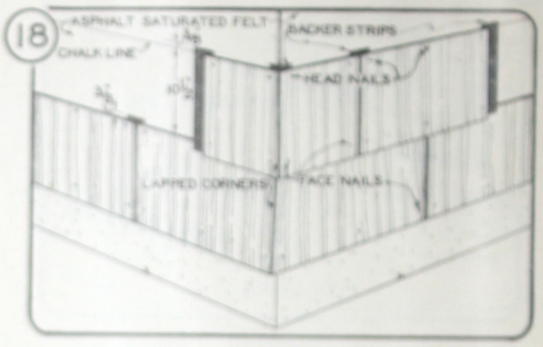


Center backer strips behind other end of shingle, projecting 3/8" above chalk line. Drive face-nail to pierce backer strip and complete driving the remaining nails

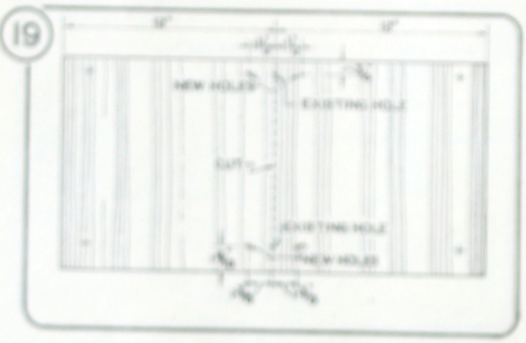
APPLICATION OF SHINGLES (Continued):



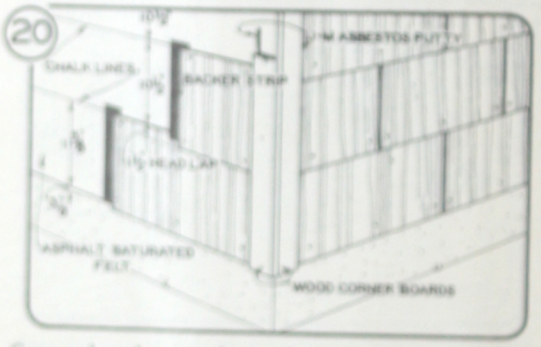
Apply adjacent corner shingle. Repeat procedure of temporary securement until backer strips are in position. Complete driving nails



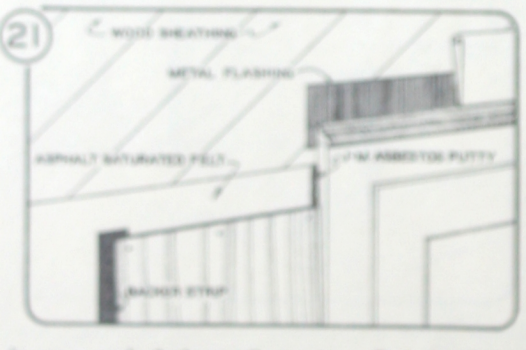
Apply succeeding shingles similarly. Face-nails must pierce backer strips. Work to chalk lines 10½" apart. Start alternate courses with half shingles. Lap corner joints right and left in alternate courses



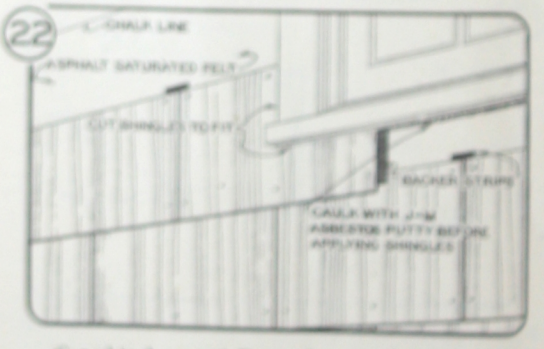
Half shingles may be cut from full shingles and repunched



Corner boards may be used if desired. Caulk with asbestos putty before applying shingles



In new work flash at all openings. Embed asbestos shingles in asbestos putty at trim



Cut shingles carefully to fit around openings

J-M ASBESTOS AND ASPHALT SHINGLES FOR SIDING

METHOD OF ESTIMATING

Sketch outline of each elevation on J-M Siding Estimating Form 95-169, available in pads of 50 at 20c a pad. Measure from corner to corner along each side of house and add all projections, such as bay windows, etc.

Measure height of wall to be covered with siding, from point where siding starts at bottom to the top of wall, by suspending steel measuring tape from highest window. Use extension rule or rod to find gable height and place these dimensions in the space provided for each elevation.

Multiply width by height for elevation sq. ft. area; from this, deduct the combined window and door sq. ft. area to arrive at the net sq. ft. area for each elevation. (Many estimators instead of measuring doors and windows allow 20 sq. ft. per door and 15 sq. ft. per window. Also, where wall heights and wall treatment are uniform, many estimators arrive at the total gross area by multiplying perimeter by height and deducting total area of openings). Multiply gable width by height and divide by two to find gable sq. ft. area.

Waste Allowance: To the total net sq. ft. area add 8 percent for waste, and figure to the nearest larger half or full square, or nearest bundle of shingles.

Corners: Add heights of elevations to find lin. ft. of corner boards (two boards; one 3" and one 4" are used for each corner). (If metal corner bead or flashing is used, only figure one foot for each lin. ft. or corner.)

Moulding: Add sides and bottom of window and door frame to find lin. ft. of moulding.

Flashing: Add widths of window and door frames to find lin. ft. of flashing, allowing 3 ft. per window and 3 ft. 6" per door.

Caulking: Around door and window openings, to prevent leaks, use J-M Asbestos Caulking Putty.

Wood Stripping: 1" x 3" No. 2 boards, ripped diagonally into bevel strips, or ordinary 4-ft. wood plaster lath, make a good job when used with a covering of J-M Asbestos Slaters Felt or 12 or 15-lb. J-M Standard Asphalt-Saturated Rag Felt. To arrive at the lin. ft. or pieces of 4-ft. lath required per square, measure the exposure of present siding, and multiply total sq. ft. area by the correct exposure in inches.

Exposure, inches	4	4½	5	5½	6	6½	7	7½	8	8½
Stripping, lin. ft.	300	288	240	224	200	188	172	160	152	144
Number of 4-ft. Lath	75	72	60	56	50	47	43	40	38	36

Labor: The most efficient results in siding application have been obtained by a crew consisting of two mechanics and one helper.

Stucco Removal: All stucco as well as all nails, wire or other projections should be removed and the sheathing covered with Asbestos Slaters Felt or the 12 or 15-lb. Standard Asphalt-Saturated Rag Felt.

Clean-up: Each job will require a nominal charge per square for clean-up.

Illustrated Sample

J-M Siding Estimate Form (Form No. 95-169)

SIDING ESTIMATE FORM

NAME J.C. Brown JOB LOCATION Same

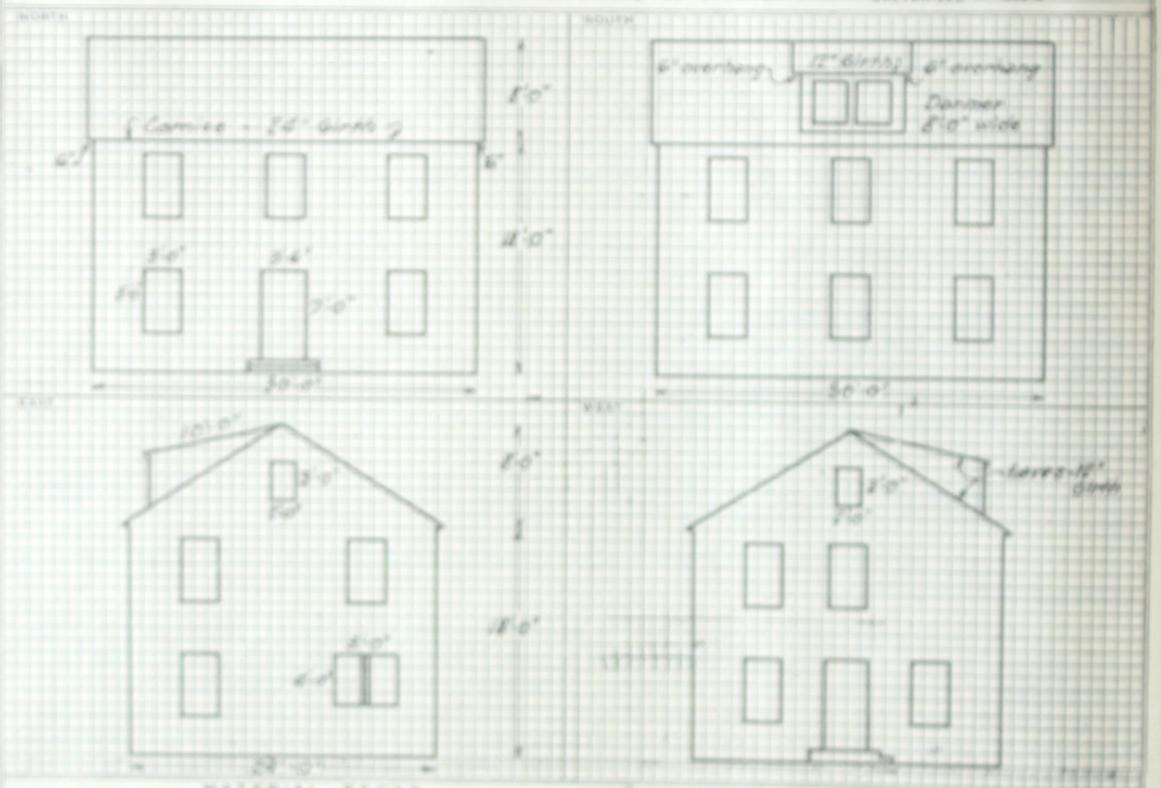
ADDRESS 324 Dean St. Brooklyn, N.Y. BY B.F. Smith DATE 6/10/38

SKETCH ELEVATIONS OF BUILDING TO BE SIDED — INDICATE LENGTHS, WIDTHS AND HEIGHTS — SHOW SIZES OF WINDOWS AND DOORS

TYPE OF NEW SIDING Shingles CORNER BOARDS None CORNER BEADS None MITRE CORNERS Yes

COLOR Per Type of Siding WOOD STRIPPING Yes

EXPOSURE OF EXISTING SIDING 6 inches FLASHING — COPPER Yes GALVANIZED None



MATERIAL RECAP

ELEVATION	HOUSE SQ. FT.	GABLE SQ. FT.	DORMER SQ. FT.	FLASHING LIN. FT.	CORNERS LIN. FT.
NORTH	445			18½	
SOUTH	450		88	24	
EAST	357	94		16	
WEST	352	94		17½	
TOTAL	1604	188	88		
ADD WASTE 8 %	128	15	incl		
HOUSE TOTAL	1732	TOTAL LIN. FT.		76	None
GABLE TOTAL	203	MOULDINGS		NO. DOORS	NO. WINDOWS
DORMER TOTAL	88	NORTH ELEV.		1	3
		SOUTH ELEV.			8
		EAST ELEV.			6
		WEST ELEV.		1	5
		TOTAL		2	24
TOTAL SQ. FT.	2023	OR 20⅓ SQUARES			

PRICE RECAP

MATERIAL		UNIT PRICE	SELLING PRICE
SIDING	20⅓ SQS.		Local Prices
FLASHING 8" WIDE	76 LFT.		" "
FLASHING 7" WIDE	LFT.	None	
CORNERS	LFT.	None	
MOULDING DOORS	2 EA.		" "
MOULDING WDS.	24 EA.		" "
CAULK FRAMES	EA.	None	
REMOVE STUCCO	SQS.	"	
PAINT DOORS	EA.	"	
PAINT WDS.	EA.	"	
PAINT CORNICE	LFT.	"	
PAINT CORNICE	LFT.	"	
CLEAN UP JOB	20⅓ SQS.		" "
TOTAL SELLING PRICE			Local Price

Asbestos Siding Shingles are made from asbestos fibre and portland cement consolidated under extremely high pressure to produce a hard, dense product which will not burn, rot, rust, or corrode. The surface coloring is an integral part of the shingle itself. Field experience has shown that asbestos-cement siding shingles possess the ideal characteristics of good appearance, durability and almost negligible upkeep costs. To obtain the fullest degree of satisfaction, it is necessary that certain precautions be observed during application and that the fundamental rules of good maintenance be followed afterward.

Construction Recommendations:

In common with other building materials, asbestos siding shingles may be soiled in handling or by improper storage during construction, and are susceptible to staining when acted upon by metal corrosion products or stains from unpainted wood. Precaution should be taken to avoid soiling and staining during the application period. Observance of the following rules is of particular importance:

1. The bundles of shingles should be stored in a *clean, dry* space before and during application.
2. Lay the shingles in dry weather and complete a given wall area, from base to top, in as short a time as feasible.
3. Have gutters and downspouts in place.
4. Wood trim and all exposed metal surfaces should be given at least a prime coat of paint before applying shingles as water dripping from unpainted wood sheathing, trims, gutters, etc., or from unpainted metal flashings, downspouts, window screens, water pipes, etc., will cause stains which detract from the finished appearance of the job.
5. Apply no more felt than can be completely covered with siding shingles the same day.
6. Soiled spots caused by finger prints should be cleaned off upon completion of the job. Dry-brushing or wiping with a clean cloth will remove most of the spots, but the application of soap and water may also be necessary.

Maintenance:

To keep an installation of asbestos siding shingles looking at its best, certain maintenance precautions should be observed. While it is impossible to prevent the accumulation of airborne dust or dirt on the shingle surface, many of the causes of surface stains can be eliminated or controlled. The most common sources of surface stains are exposed metal parts, such as window screens, metal gutters and downspouts, window and door flashings, hinges, screen hangers, metal pipe inlets for electric lines or telephone cables. Rain water passing over these parts, take a small amount of metal into solution and deposits it on the surfaces below. These copper or iron solutions will stain painted areas, shingles or any other surface with which they come in contact. It is possible to prevent staining of this type by painting all these exposed parts and keeping them painted. Copper or iron window screens and screen doors should be given a coating of clear spar varnish *every year* to prevent corrosion and subsequent staining difficulties. Other metal parts should be painted. At the first sign of corrosion they should be re-painted.

The eave troughs or gutters should be kept in repair and cleaned periodically so that they function properly. Provide suitable drains to carry away water from the downspouts to prevent splashing on the lower courses of shingles.

Dirt and Stain Removal:

In industrial areas or other localities where there are high concentrations of airborne dust and soot, a house may gradually pick up a deposit of surface dirt, usually heavier directly under the butts where normal rains do not wash it off. Soap and water, applied with a stiff fibre brush, will remove most of the dirt. Other cleaning compounds such as tri-sodium phosphate (Oakite) or sodium metasilicate (Metso) and abrasive soap cleaners, such as Bab-O or Old Dutch Cleanser, are also satisfactory. Johns-Manville Siding Shingle Cleaner, which was developed especially for this purpose, is more effective than soap or these alkaline cleaning compounds in that it will remove both soot and dirt accumulations and most of the common stains which are encountered in field service. The Siding Shingle Cleaner can be obtained from the local J-M Dealer. The Cleaner should be reduced with water in the ratio of one part Cleaner to ten parts of water and applied with a cloth, sponge, or fibre brush. Apply the Cleaner to a small area at a time with vigorous scrubbing with a fibre brush of badly soiled or stained sections. Rinse with clear water to remove the loosened dirt and grime.

Deeply imbedded stains which are not readily removed by the previously described treatments may require special attention. Heavy deposits of iron rust or copper stains can be removed by using a stronger solution of the J-M Siding Shingle Cleaner. (Use a ratio of one part Cleaner to five or six of water, instead of the recommended 1—10 mixture.)

(Continued)

Care and Maintenance of J-M Asbestos Siding Shingles—continued:

If the J-M Cleaner is not available, the following treatments are satisfactory.

Copper Stains: Use paste consisting of one part ammonium hydroxide, ten parts water, sixteen parts talc, and four parts ammonium chloride. Thoroughly mix the talc and ammonium chloride, then add the liquid in sufficient quantity to form a heavy paste. Carefully apply the paste with a trowel or scrubbing brush over the entire shingle (dark rings may form if paste is only applied in spots). After 24 hours thoroughly wash the dried paste off the stained shingle.

Iron Rust Stains: Use a 5 percent solution of phosphoric acid or a 2 percent solution of oxalic acid, rinsing with clear water after application.

Brown Stains from Unpainted Wood: Use an abrasive cleanser such as Bab-O, or Old Dutch Cleanser. A 2 to 5 percent solution of oxalic acid is also effective.

Paint Stains: Wet paint spots can be removed by carefully wiping with a cloth soaked in turpentine or other paint thinner. Dry paint spots can be scraped off with a knife blade and then wiped with a cloth wet with paint thinner.

Oil and Grease Stains: Use a paste consisting of 3½ pounds of whiting mixed with one quart of either carbon tetrachloride (Carbona), benzine, or naphtha. Apply with a trowel and follow by wiping with a clean, dry cloth.

Ink Stains: Use sodium hypochlorite solution (Clorox). Allow sufficient time for the solution to penetrate and bleach the stain. Repeated applications may be necessary. After stain is removed, wash the shingle thoroughly with clear water.

Asphalt and Tar Stains: Asphalt and tar spots should be wiped off with a cloth wet with turpentine or paint thinner using care in order to avoid spreading of the stained area. Stains of this sort cannot be completely removed by washing, but weathering will very materially reduce the intensity of the stain.

CAUTION: Caution should be observed in using the J-M Shingle Cleaner or any of the acid or alkaline treatments described. The use of rubber gloves is recommended. Woodwork, shrubbery and flower planting should be protected, and any cleaning solution dropped on same should be immediately washed off with clear water.

Painting Asbestos-Cement Shingles:

While asbestos-cement siding shingles do not require painting for protection against weathering, there are times when it is desirable to paint the shingles for special decorative purposes or to achieve a change in the appearance of a house. Johns-Manville has carried out extensive tests on methods of painting asbestos-cement shingles as well as other asbestos-cement products.

In general the results of many laboratory and field tests show that there are several commercially available paint products which are satisfactory for this purpose. Painting systems which have been tested by Johns-Manville and can be recommended for exterior service conditions are described below. Before painting, it is essential to wire-brush shingles to remove the dirt and loose surface fibres. Paint should be applied only in dry weather and over dry shingles, as the presence of moisture will prevent proper penetration and bond.

1. Chlorinated Rubber Paint: Chlorinated rubber paint gives excellent outdoor service over asbestos-cement products. It should be applied by brush, without special primer or undercoater, following the manufacturer's specifications. Two or three coats are required, depending upon the color selected.

2. Brick and Stucco Paints: Paints of this type are specifically designed for application over brick, stucco or masonry surfaces. They are also satisfactory for asbestos-cement shingles. Apply according to the manufacturer's directions, using two or three brush coats depending upon the color used. Brick and stucco paints dry to a flat or semi-gloss surface.

3. Regular Exterior House Paints: Two different exterior house paint systems are satisfactory:

a. The regular three-coat system of a good reliable house paint, self-primed according to the directions of the manufacturer, gives satisfactory results and good durability.

b. A painting system consisting of an oleo-resinous or chlorinated rubber primer, followed by one or two coats of regular exterior oil paint.

COLLATED JAN 14 1949


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